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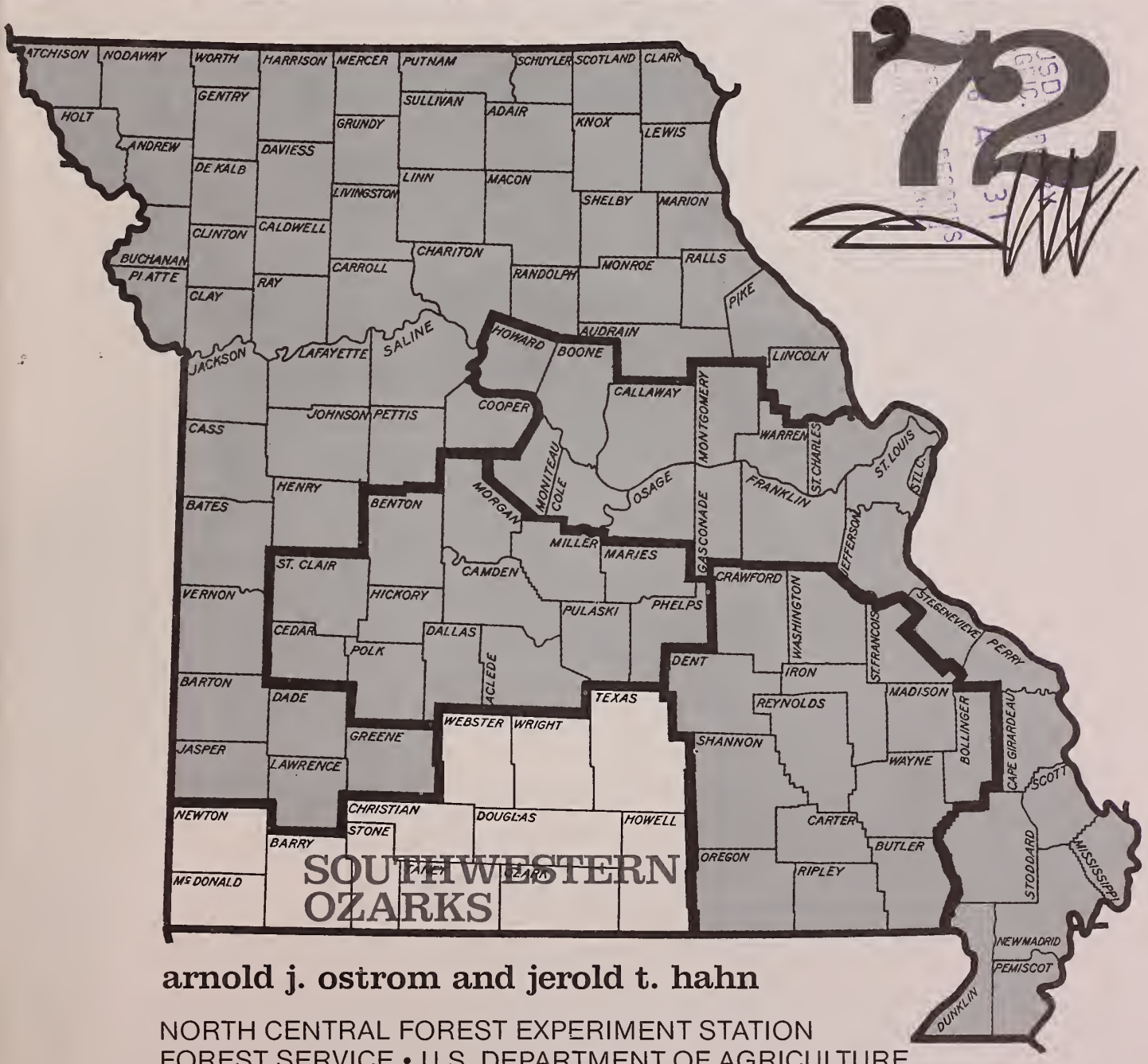
REST SERVICE
BULLETIN NC-21

TIMBER RESOURCE OF MISSOURI'S
southwestern ozarks



arnold j. ostrom and jerold t. hahn

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE • U.S. DEPARTMENT OF AGRICULTURE

Some Recent Forest Survey Reports Published by
the North Central Forest Experiment Station

Primary forest products industry and industrial roundwood production, Michigan, 1969, by James E. Blyth and Allen H. Boelter. USDA For. Serv. Resour. Bull. NC-12, 12 p., illus. 1971.

Kansas saw-log production jumps 38 percent from 1964 to 1969, by James E. Blyth and Leonard K. Gould. USDA For. Serv. Res. Note NC-128, 2 p., illus. 1971.

Wisconsin's 1968 timber resource--a perspective, by John S. Spencer, Jr. and Harry W. Thorne. USDA For. Serv. Resour. Bull. NC-15, 80 p., illus. 1972.

Missouri's primary forest products output and industries, 1969, by James E. Blyth and Robert Massengale. USDA For. Serv. Resour. Bull. NC-16, 15 p., illus. 1972.

Forest area in Wisconsin counties, 1968, by Burton L. Essex. USDA For. Serv. Res. Note NC-135, 4 p., illus. 1972.

Iowa saw-log production and sawmill industry, 1969, by James E. Blyth and William A. Farris. USDA For. Serv. Res. Note NC-136, 4 p., illus. 1972.

Timber volume in Wisconsin counties, by Arnold J. Ostrom. USDA For. Serv. Res. Note NC-145, 4 p., illus. 1972.

Pulpwood production in the North Central Region by county, 1971, by James E. Blyth. USDA For. Serv. Resour. Bull. NC-17, 21 p., illus. 1973.

Pulpwood production in the North Central Region by county, 1972, by James E. Blyth. USDA For. Serv. Resour. Bull. NC-18, 16 p., illus. 1973.

Lake States pulpwood production dips to 4 million cords in 1971, by James E. Blyth. USDA For. Serv. Res. Note NC-148, 3 p. 1973.

Local net timber volume equations for Wisconsin, by Jerold T. Hahn. USDA For. Serv. Res. Note NC-149, 4 p., illus. 1973.

Pulpwood production in the Lake States by county, 1972, by James E. Blyth. USDA For. Serv. Res. Note NC-152, 4 p. 1973.

GLOSSARY OF TERMS

Used in Resource Bulletins Reporting

MISSOURI'S 1972 TIMBER RESOURCE

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Land-Use Classes

Gross area.--The entire area of land and water as determined by the Bureau of Census, 1960.

Land area.--The area of dry land and land temporarily or partially covered by water such as marshes, swamps, flood plains, streams, sloughs, and estuaries. Canals less than 1/8-mile wide, and lakes, reservoirs, and ponds smaller than 40 acres are included as land area. These figures are from the Bureau of Census, 1960.

Forest land.--Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Includes afforested areas. The minimum forest area classified was 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas were classed as forest if less than 120 feet in width.

Commercial forest land.--Forest land that is producing or is capable of producing crops of industrial wood and that is not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both inaccessible and inoperable areas.

Noncommercial forest land.--(a) Unproductive--forest land incapable of yielding crops of industrial wood because of adverse site conditions, (b) Productive-reserved--forest land withdrawn from commercial timber use through statute or administrative regulation, or exclusively used for Christmas tree production.

Nonforest land.--Land that has never supported forests, and land formerly forested where forest use is precluded by development for nonforest uses, such as cropland, improved pasture, residential areas, and city parks. Also includes improved roads and adjoining rights-of-way, powerline clearings, and certain areas of water classified by the Bureau of Census as land. Unimproved roads, streams, canals, and nonforest strips in forest areas must be more than 120 feet wide, and clearings in forest areas must be more than 1 acre in size, to qualify as nonforest land.

Ownership Classes

National forest.--Federal lands that have been designated by executive order or statute as national forests or purchase units, and other lands under the administration of the USDA Forest Service.

Other Federal.--Federal lands other than national forest.

State, county, and municipal.--Lands owned by States, counties, or local public agencies, or lands leased by them for more than 50 years.

Forest industry.--Lands owned by companies or individuals operating primary wood-using plants.

Farmer-owned.--Lands owned by operators of farms. A farm must include 10 or more acres from which the sale of agricultural products totals $50 or more annually, or if less than 10 acres, the yield must be at least $250 annually.

Miscellaneous private.--Privately owned lands other than forest industry- or farmer-owned.

Tree Classes

All live trees.--Growing-stock, rough and rotten trees 1 inch d.b.h. and larger.

Growing-stock trees.--All live trees of commercial species except rough and rotten trees.

Desirable trees.--Growing-stock trees having no serious defects in quality limiting present or prospective use, and of relatively high vigor and containing no pathogens that may result in death or serious deterioration before rotation age. These are trees that would be favored by forest managers in silvicultural operations.

Acceptable trees.--Trees meeting the standards for growing stock but not qualifying as desirable trees.

Sawtimber trees.--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs, each 8 feet or longer. At least 33 percent of the gross volume of the tree must be sound wood. Softwoods must be at least 9.0 inches d.b.h. and hardwoods at least 11.0 inches.

Poletimber trees.--Growing-stock trees of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size, and of good form and vigor.

Saplings.--Live trees of commercial species 1.0 to 5.0 inches d.b.h. and of good form and vigor.

Seedlings.--Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive according to regional standards. (Examples of seedlings not expected to survive are those that are diseased or heavily damaged by logging, browsing, or fire). Only softwood seedlings over 6 inches and hardwood seedlings over 1 foot in height are counted.

Rotten trees.--Live trees (any size) of commercial species that do not contain a merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of rot (that is, when more than 50 percent of the cull volume of the tree is rotten).

Rough trees.--Live trees that do not contain at least one merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of roughness and poor form, as well as all live noncommercial species.

Short-log (rough trees).--Sawtimber-sized trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Stocking

The degree of utilization of land by trees as measured in terms of basal area and/or the number of trees in a stand compared to the basal area and/or number of trees required to utilize fully the growth potential of the land.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees do reach 5 inches d.b.h.

Stocking of all live trees, growing-stock trees, and desirable trees are recorded separately and stands are grouped into the following stocking classes.

Stocking Classes

Overstocked stands.--Stands in which stocking of trees is 133 percent or more.

Fully stocked stands.--Stands in which stocking of trees is from 100 to 133 percent.

Medium-stocked stands.--Stands in which stocking of trees is from 60 to 100 percent.

Poorly stocked stands.--Stands in which stocking of trees is from 16.7 to 60 percent.

Nonstocked areas.--Commercial forest land on which stocking of trees is less than 16.7 percent.

Area-Condition Classes

Class 10.--Areas fully stocked with desirable trees but not overstocked.

Class 20.--Areas fully stocked with desirable trees, but overstocked with all live trees.

Class 30.--Areas medium to fully stocked with desirable trees, and with less than 30 percent of the area controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Class 40.--Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees and/or conditions that ordinarily prevent occupancy by desirable trees.

Class 50.--Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.

Class 60.--Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.

Class 70.--Areas poorly stocked with desirable trees, and poorly stocked with growing-stock trees.

Stand-Size Classes

Stand.--A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Sawtimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber or poletimber trees and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.--Stands at least 16.7 percent stocked with growing-stock trees, and with half or more of this stocking in sawtimber and/or poletimber trees and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands.--Stands at least 16.7 percent stocked with growing-stock trees and with saplings and/or seedlings comprising more than half of this stocking.

Nonstocked areas.--Commercial forest land on which stocking of growing-stock trees is less than 16.7 percent.

Other Classifications

Site index.--An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Site classes.--A classification of forest land in terms of inherent capacity to grow crops of industrial wood expressed in cubic-foot growth per acre per year.

Stand-age.--Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Basal area.--The area in square feet of the cross section at breast height of a single tree. When the basal area of all the trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Forest Types

A classification of forest land based upon the species forming a plurality of live-tree stocking. Major forest types in Missouri are:

Shortleaf pine.--Forests in which shortleaf pine comprises a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Eastern redcedar.--Forests in which eastern redcedar comprises a plurality of the stocking. (Common associates include oak and hickory.)

Eastern redcedar-hardwood.--Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking but in which eastern redcedar comprises 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

Shortleaf pine-oak.--Forests in which upland oaks comprise a plurality of the stocking, but in which shortleaf pine comprises 25 to 50 percent of the stocking.

Post-blackjack oak.--Forests in which post oak or blackjack oak, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Black-scarlet oak.--Forests in which upland oaks or hickory, singly or in combination, comprises a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent, or where white oak or post and blackjack oak

comprise a plurality. (Common associates include yellow-poplar, elm, maple, and black walnut.)

White oak.--Forests in which white oak and other white oak species, singly or in combination, comprise a plurality of the stocking except where shortleaf pine or redcedar comprises 25 to 50 percent.

Oak-gum-cypress.--Bottomland forests in which bottomland oaks such as pin, swamp white, and shingle oaks, along with tupelo, blackgum, sweetgum, and cypress, singly or in combination, comprise a plurality of the stocking. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

Elm-ash-cottonwood.--Forests in which elm, ash, or cottonwood, singly or in combination, comprises a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple.)

Cottonwood.--Forests in which cottonwood comprises a plurality of the stocking.

Maple-beech.--Forests in which hard maple or beech, singly or in combination, comprises a plurality of the stocking. (Common associates include elm and basswood.)

Timber Volume

Volume of growing stock.--The volume of sound wood in the bole of growing-stock trees 5.0 inches d.b.h. and over, from a 1-foot stump to a minimum of 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs. Growing-stock volumes are shown in cubic feet and cords. Conversion from one unit of measure to another may be accomplished by a factor of 79 cubic feet per solid wood cord.

Volume of sawtimber.--Net volume of the saw log portion of live sawtimber trees in board feet, International 1/4-inch rule, from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

Upper stem portion.--That part of the bole of sawtimber trees above the merchantable sawtimber top to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Growth and Mortality

Net annual growth of growing stock.--Net annual growth of growing stock is the change in volume of sound wood that occurred during 1971 in growing-stock trees that were 5.0 inches d.b.h. or larger at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than 5.0 inches d.b.h. at the beginning of the year that grew sufficiently during the year to be reclassified into the 5.0-inch-or-larger d.b.h. classes (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year but were reclassified during the year as growing-stock trees,

plus

the annual change in volume of sound wood that occurred during the year on growing-stock trees that died during the year,

plus

the annual change in volume of sound wood that occurred in growing-stock trees included among timber removals for the year (See glossary for timber removals from growing stock, p. 5),

plus

the annual change in volume of sound wood in trees that had been classified as growing stock at the beginning of the year but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the years the trees were classified as growing stock was included,

minus

the volume of sound wood in growing-stock trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as growing stock at the beginning of the year, but were reclassified during the year as rough or rotten trees.

Net annual growth of sawtimber.--Net annual growth of sawtimber is the change in volume of sound wood that occurred during 1971 in trees that were sawtimber size at the beginning of the year,

plus

the volume of sound wood in growing-stock trees smaller than sawtimber size at the beginning of the year that grew sufficiently during the year to be reclassified as sawtimber trees (ingrowth),

plus

the volume of sound wood in trees that had been classified either as rough or rotten trees at the beginning of the year, but were reclassified during the year as sawtimber trees,

plus

the annual change in volume of sound wood that occurred during the year on sawtimber trees that died during the year,

plus

the annual change in volume of sound wood that occurred in sawtimber trees included among timber removals for the year (see glossary for timber removals from sawtimber, p. 5),

plus

the annual change in volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees. Only the volume change that occurred during the portion of the year the trees were classified as sawtimber was included,

minus

the volume of sound wood in sawtimber trees that died from natural causes during the year, and

minus

the volume of sound wood in trees that had been classified as sawtimber trees at the beginning of the year, but were reclassified during the year as rough or rotten trees.

Mortality of growing stock.--The volume of sound wood in growing-stock trees dying annually from natural causes. Natural causes include fire, insects, disease, animal damage, weather, and suppression.

Mortality of sawtimber.--The net board-foot volume of sawtimber trees dying annually from natural causes.

Timber Removals

Timber removals from growing stock.--The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals (see glossary for volume of growing stock, p. 4). Roundwood products are logs, bolts, or other round sections cut and used from trees. Logging residues are the unused portions of cut trees plus unused trees killed by logging. Other removals are growing-stock trees removed but not utilized for products or trees left standing but "removed" from the commercial forest land classification by land use change--examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Timber removals from sawtimber.--The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals (see glossary for volume of sawtimber, p. 4).

Timber products output.--All timber products cut from roundwood, and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees,

cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulp chips or other products.

Plant byproducts.--Wood products, such as pulpwood chips, obtained incidental to production of other manufactured products.

Plant residues.--Wood materials from manufacturing plants not utilized for some product.

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Ostrom, Arnold J., and Jerold T. Hahn.
1974. Timber resource of Missouri's Southwestern Ozarks, 1972. North Cent. For. Exp. Stn., St. Paul, Minn. 60 p. (USDA For. Serv. Resour. Bull. NC-21)

The third timber inventory of Missouri's Southwestern Ozarks Forest Survey Unit shows a substantial decline in the volumes of both growing stock and sawtimber between 1959 and 1972. Commercial forest area also declined substantially during the same period. Presented are highlights and statistics on forest area and timber volume, growth, mortality, ownership, and use.

OXFORD: 524.1:905.2(778). KEY WORDS: timber volume, growth, utilization, forest areas.

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FOREWORD

Forest Survey is a continuing endeavor as mandated by the McSweeney-McNary Forest Research Act of 1928. Its objective is to inventory periodically the Nation's forest lands to determine their extent, condition, and volumes of timber, growth, and depletions. This kind of up-to-date information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are charged with the responsibility for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for Forest Survey work done in Michigan, Wisconsin, Minnesota, North Dakota, eastern South Dakota, Nebraska, Iowa, Illinois, Indiana, Missouri, and Kansas.

Fieldwork for the 1972 Missouri Forest Survey was started in January 1970 and was completed in May 1973. Reports on the two previous surveys of Missouri's timber resource are dated 1947 and 1959. These earlier reports provide a basis for comparison with the information in this report for those interested in trends that have developed over the past quarter century.

Similar Resource Bulletins reporting statistical highlights and detailed tables on the timber resource of the other Survey Units in Missouri (see cover) are available or are in preparation. These will provide the basis for a comprehensive analysis of the timber resource of the entire State which will be published as a separate report.

A higher degree of accuracy of survey information was obtained during the 1972 survey than otherwise would have been feasible because of intensified field sampling made possible by extra funding provided the North Central Station by the State Legislature through the Missouri Department of Conservation. The Department also conducted a canvass of primary wood-using plants in the State, which was used to help in estimating the quantity of timber products harvested in Missouri.

Personnel from the National Forests in Missouri installed sample plots on national forest lands, which were used to inventory those lands. The USDA Agricultural Stabilization and Conservation Service and the State Historical Society of Missouri furnished aerial photos used in the survey.

NOTE

References to information concerning growth, mortality, and removals are dated 1971, but information concerning forest area and timber inventory incorporates changes that occurred during calendar year 1971; therefore, they represent conditions as of January 1, 1972 and are dated 1972.

Many of the terms used in this Resource Bulletin have specialized meanings, which are defined in "Glossary of Terms used in Resource Bulletins Reporting Missouri's 1972 Timber Resource." Copies of this Glossary can be obtained from the North Central Forest Experiment Station.

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TIMBER RESOURCE OF MISSOURI'S SOUTHWESTERN OZARKS, 1972

Arnold J. Ostrom and Jerold T. Hahn

HIGHLIGHTS[1/]

Forest Area

Forest land covers 2.4 million acres, 45 percent of the Unit's land area. In 1959 the area was 3.0 million acres, 53 percent of the land area.

Commercial forests occupy 2.3 million acres compared with 2.8 million acres in 1959.

Texas County contains the largest area of commercial forest in the Unit (374 thousand acres), followed by Howell County (271 thousand acres) and Douglas County (246 thousand acres).

Poletimber stands (32 percent of the commercial forest area), sawtimber stands (31 percent), and sapling and seedling stands (30 percent) are almost equal in area. Nonstocked areas make up the remaining 7 percent.

The black-scarlet oak type (910 thousand acres) embraces the largest area of commercial forest of all forest types, followed by the post-blackjack oak type (724 thousand acres).

Farmers, private individuals, and corporations not directly engaged in timber processing own 83 percent of the commercial forest.

1/ Published 1959 statistics have been adjusted to be comparable with 1972 data because of changed definitions and procedures used during the two surveys.

Timber Volume

Growing-stock volume on commercial forest land is 851 million cubic feet (10.8 million cords), as compared to 958 million cubic feet (12.1 million cords) in 1959.

Sawtimber volume is 2.1 billion board feet, as compared to 2.2 billion board feet in 1959.

The oaks account for three-fourths of the 1972 growing-stock volume.

Average volume per acre of growing stock is 368 cubic feet (4.7 cords), compared to 340 cubic feet (4.3 cords) in 1959.

Farmers, private individuals, and corporations not directly engaged in timber processing own 81 percent of the growing-stock volume.

The volume of rough and rotten trees that are alive on commercial forest land is 557 million cubic feet (7.0 million cords), equal to two-thirds of the growing-stock volume.

Stand Conditions

Net annual growth on growing-stock trees was 25 million cubic feet (321 thousand cords) in 1971.

The net annual growth rate of growing stock was 3.0 percent of inventory volume.

Mortality of growing-stock trees in 1971 amounted to 1.9 million cubic feet (24

thousand cords), and was attributed chiefly to disease and the effects of weather.

Two-thirds of the commercial forest is capable of accruing less than 50 cubic feet of growth per acre per year.

Sixty-three percent of the commercial forest is composed of stands younger than 50 years old.

Seventy-one percent of the commercial forest is capable of growing trees 50 feet and taller at age 50, but only 18 percent is capable of growing trees 70 feet and taller at the same age.

Seventy percent of the commercial forest is poorly stocked with growing-stock trees. Only 8 percent is nonstocked with these trees. (See glossary for nonstocked areas, page 2.)

Timber Use

Timber removals from growing stock amounted to 32 million cubic feet (406 thousand cords) in 1971, compared to a net annual growth on growing-stock trees of 25 million cubic feet (321 thousand cords). (See glossary for timber removals, page 5.)

Half of the volume of timber removals was derived from "other" removals; therefore, it was not utilized. (See glossary for timber removals, page 5.)

Timber products output in 1969 totaled 26 million cubic feet, of which 13.4 million was in growing stock.

Volume of residues from primary plants in 1969 was 6.5 million cubic feet, of which 4.1 million cubic feet were unused.2/

Allowable Cut

For the period 1972-1981, the annual allowable cut from growing stock was estimated to average 23 million cubic feet (287 thousand cords)--20 million cubic feet from harvest cuttings and 3 million cubic feet from thinnings.

For the same period an additional annual allowable cut from rough and rotten (nongrowing-stock) trees was estimated to average 14 million cubic feet (172 thousand cords).

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2/ Primary plants are those using logs and bolts or chips, shavings, etc., from logs and bolts.

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Text Tables:

53. Sampling errors for estimates smaller than unit totals of volume, net growth, and removals, and of area of commercial forest land.

54. Forest type, site index, and rotation age by management objective used in calculation of annual allowable cut, Missouri.

Table 1.--*Area of land by land class, Southwestern Ozarks, Missouri, 1959 and 1972*

(Thousand acres)

Land class	1959[1/]	1972
Commercial forest land:		
Shortleaf pine type	45.49	17.80
Eastern redcedar type	63.75	12.60
Eastern redcedar-hardwood type	83.65	85.10
Shortleaf pine-oak type	114.91	65.10
Post-blackjack oak type	437.62	723.80
Black-scarlet oak type	1,044.44	910.30
White oak type	176.52	287.50
Elm-ash-cottonwood type	51.15	29.50
Maple-beech type	--	13.70
Nonstocked	797.84	166.00
Subtotal	2,815.37	2,311.40
Noncommercial forest land:		
Unproductive	121.23	109.30
Productive-reserved	17.60	22.60
Subtotal	138.83	131.90
Nonforest land	2,573.52	2,997.00
Total	5,527.72	5,440.30

1/ Published 1959 areas have been adjusted to be comparable with 1972 areas.

Table 2.--*Area of land and forest land, by county, Southwestern Ozarks, Missouri, 1972*

County	Land area	Forest land			Commercial forest as a percent of land area
		All forest	Noncommercial	Commercial	
Barry	501.0	197.1	14.5	182.6	36
Christian	362.9	136.7	8.3	128.4	35
Douglas	517.6	254.4	8.3	246.1	48
Howell	588.8	277.3	6.7	270.6	46
McDonald	345.6	170.6	3.7	166.9	48
Newton	402.5	105.9	2.3	103.6	26
Ozark	468.1	259.1	22.8	236.3	50
Stone	287.5	131.9	7.8	124.1	43
Taney	393.9	235.7	38.2	197.5	50
Texas	757.1	384.3	10.7	373.6	49
Webster	377.6	123.4	3.2	120.2	32
Wright	437.7	166.9	5.4	161.5	37
All counties	5,440.3	2,443.3	131.9	2,311.4	42

Table 3.--*Area of commercial forest land for Missouri's Southwestern Ozarks Survey Unit and for individual counties within Unit, by forest type and stand-size class, 1972*

(Thousand acres)

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
ALL COUNTIES					
Shortleaf pine	17.8	8.2	9.6	--	--
Eastern redcedar	12.6	--	--	12.6	--
Eastern redcedar-hardwood	85.1	9.0	14.1	62.0	--
Shortleaf pine-oak	65.1	30.1	22.1	12.9	--
Post-blackjack oak	723.8	177.1	258.9	287.8	--
Black-scarlet oak	910.3	331.6	306.1	272.6	--
White oak	287.5	128.9	116.4	42.2	--
Elm-ash-cottonwood	29.5	13.7	7.0	8.8	--
Maple-beech	13.7	6.7	7.0	--	--
Nonstocked 1/	166.0	--	--	--	166.0
All forest types	2,311.4	705.3	741.2	698.9	166.0
BARRY COUNTY					
Shortleaf pine	2.0	--	2.0	--	--
Eastern redcedar	1.4	--	--	1.4	--
Eastern redcedar-hardwood	11.0	1.4	1.1	8.5	--
Shortleaf pine-oak	6.6	3.4	2.3	.9	--
Post-blackjack oak	53.6	12.9	19.4	21.3	--
Black-scarlet oak	71.3	26.6	22.7	22.0	--
White oak	22.2	11.0	8.5	2.7	--
Elm-ash-cottonwood	1.8	.9	.5	.4	--
Maple-beech	.8	.3	.5	--	--
Nonstocked 1/	11.9	--	--	--	11.9
All forest types	182.6	56.5	57.0	57.2	11.9
CHRISTIAN COUNTY					
Shortleaf pine	1.1	.5	.6	--	--
Eastern redcedar	.7	--	--	.7	--
Eastern redcedar-hardwood	6.5	.4	1.0	5.1	--
Shortleaf pine-oak	3.7	1.7	1.2	.8	--
Post-blackjack oak	38.3	8.9	14.0	15.4	--
Black-scarlet oak	48.5	17.0	16.6	14.9	--
White oak	16.5	7.4	6.9	2.2	--
Elm-ash-cottonwood	2.7	1.5	.5	.7	--
Maple-beech	.7	.3	.4	--	--
Nonstocked 1/	9.7	--	--	--	9.7
All forest types	128.4	37.7	41.2	39.8	9.7
DOUGLAS COUNTY					
Shortleaf pine	3.3	1.8	1.5	--	--
Eastern redcedar	.7	--	--	.7	--
Eastern redcedar-hardwood	3.6	--	1.4	2.2	--
Shortleaf pine-oak	8.9	3.7	3.2	2.0	--
Post-blackjack oak	78.4	18.9	26.4	33.1	--
Black-scarlet oak	97.8	33.9	33.2	30.7	--
White oak	30.3	13.6	12.1	4.6	--
Elm-ash-cottonwood	2.4	1.3	.7	.4	--
Maple-beech	1.8	.9	.9	--	--
Nonstocked 1/	18.9	--	--	--	18.9
All forest types	246.1	74.1	79.4	73.7	18.9

1/ See glossary for stand-size classes (page 3)

(Table 3 cont. on next page)

(Table 3 cont.)

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
HOWELL COUNTY					
Shortleaf pine	3.2	1.3	1.9	--	--
Eastern redcedar	.6	--	--	.6	--
Eastern redcedar-hardwood	3.4	--	1.3	2.1	--
Shortleaf pine-oak	8.3	4.1	2.8	1.4	--
Post-blackjack oak	86.7	22.7	30.1	33.9	--
Black-scarlet oak	113.1	45.8	34.5	32.8	--
White oak	32.5	15.4	12.7	4.4	--
Elm-ash-cottonwood	2.0	.8	.5	.7	--
Maple-beech	1.7	.9	.8	--	--
Nonstocked 1/	19.1	--	--	--	19.1
All forest types	270.6	91.0	84.6	75.9	19.1
MC DONALD COUNTY					
Eastern redcedar	.2	--	--	.2	--
Eastern redcedar-hardwood	2.0	--	.8	1.2	--
Shortleaf pine-oak	3.5	1.7	1.2	.6	--
Post-blackjack oak	54.8	14.6	21.7	18.5	--
Black-scarlet oak	71.0	27.3	25.2	18.5	--
White oak	21.7	9.7	8.9	3.1	--
Elm-ash-cottonwood	1.9	.9	.6	.4	--
Maple-beech	.9	.5	.4	--	--
Nonstocked 1/	10.9	--	--	--	10.9
All forest types	166.9	54.7	58.8	42.5	10.9
NEWTON COUNTY					
Eastern redcedar	.1	--	--	.1	--
Eastern redcedar-hardwood	1.2	--	.5	.7	--
Shortleaf pine-oak	2.1	1.1	.7	.3	--
Post-blackjack oak	33.7	9.3	12.4	12.0	--
Black-scarlet oak	42.4	17.8	13.2	11.4	--
White oak	13.0	6.3	5.3	1.4	--
Elm-ash-cottonwood	2.5	.9	.3	1.3	--
Maple-beech	.5	.3	.2	--	--
Nonstocked 1/	8.1	--	--	--	8.1
All forest types	103.6	35.7	32.6	27.2	8.1
OZARK COUNTY					
Shortleaf pine	.9	.1	.8	--	--
Eastern redcedar	1.6	--	--	1.6	--
Eastern redcedar-hardwood	10.7	2.6	1.7	6.4	--
Shortleaf pine-oak	6.4	3.3	1.8	1.3	--
Post-blackjack oak	73.6	18.4	25.6	29.6	--
Black-scarlet oak	92.5	35.3	30.8	26.4	--
White oak	29.1	14.0	11.4	3.7	--
Elm-ash-cottonwood	3.5	2.1	.9	.5	--
Maple-beech	1.2	.6	.6	--	--
Nonstocked 1/	16.8	--	--	--	16.8
All forest types	236.3	76.4	73.6	69.5	16.8

1/ See glossary for stand-size classes (page 3)

(Table 3 cont. on next page)

(Table 3 cont.)

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
STONE COUNTY					
Shortleaf pine	.3	.1	.2	--	--
Eastern redcedar	.9	--	--	.9	--
Eastern redcedar-hardwood	9.4	.7	.7	8.0	--
Shortleaf pine-oak	2.9	1.4	.9	.6	--
Post-blackjack oak	36.8	8.8	14.2	13.8	--
Black-scarlet oak	45.7	16.4	16.3	13.0	--
White oak	16.9	6.8	7.0	3.1	--
Elm-ash-cottonwood	2.0	.9	.4	.7	--
Maple-beech	.6	.3	.3	--	--
Nonstocked 1/	8.6	--	--	--	8.6
All forest types	124.1	35.4	40.0	40.1	8.6
TANEY COUNTY					
Eastern redcedar	4.3	--	--	4.3	--
Eastern redcedar-hardwood	28.1	3.9	2.2	22.0	--
Shortleaf pine-oak	3.4	1.1	1.0	1.3	--
Post-blackjack oak	58.4	11.4	18.4	28.6	--
Black-scarlet oak	62.9	18.5	20.0	24.4	--
White oak	22.9	9.7	9.8	3.4	--
Elm-ash-cottonwood	.9	.4	.3	.2	--
Maple-beech	1.3	.6	.7	--	--
Nonstocked 1/	15.3	--	--	--	15.3
All forest types	197.5	45.6	52.4	84.2	15.3
TEXAS COUNTY					
Shortleaf pine	6.8	4.4	2.4	--	--
Eastern redcedar	1.4	--	--	1.4	--
Eastern redcedar-hardwood	4.6	--	1.9	2.7	--
Shortleaf pine-oak	12.9	5.5	5.0	2.4	--
Post-blackjack oak	118.8	28.2	43.2	47.4	--
Black-scarlet oak	151.3	50.9	54.5	45.9	--
White oak	46.9	19.3	19.3	8.3	--
Elm-ash-cottonwood	2.7	1.1	1.1	.5	--
Maple-beech	2.4	1.1	1.3	--	--
Nonstocked 1/	25.8	--	--	--	25.8
All forest types	373.6	110.5	128.7	108.6	25.8
WEBSTER COUNTY					
Eastern redcedar	.1	--	--	.1	--
Eastern redcedar-hardwood	2.1	--	.6	1.5	--
Shortleaf pine-oak	2.5	1.3	.8	.4	--
Post-blackjack oak	38.7	10.5	14.5	13.7	--
Black-scarlet oak	50.1	20.6	16.0	13.5	--
White oak	15.2	7.2	6.1	1.9	--
Elm-ash-cottonwood	2.5	.8	.4	1.3	--
Maple-beech	.6	.3	.3	--	--
Nonstocked 1/	8.4	--	--	--	8.4
All forest types	120.2	40.7	38.7	32.4	8.4

1/ See glossary for stand-size classes (page 3)

(Table 3 cont. on next page)

(Table 3 cont.) WRIGHT COUNTY

Forest type	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Shortleaf pine	.2	--	.2	--	--
Eastern redcedar	.6	--	--	.6	--
Eastern redcedar-hardwood	2.5	--	.9	1.6	--
Shortleaf pine-oak	3.9	1.8	1.2	.9	--
Post-blackjack oak	52.0	12.5	19.0	20.5	--
Black-scarlet oak	63.7	21.5	23.1	19.1	--
White oak	20.3	8.5	8.4	3.4	--
Elm-ash-cottonwood	4.6	2.1	.8	1.7	--
Maple-beech	1.2	.6	.6	--	--
Nonstocked 1/	12.5	--	--	--	12.5
All forest types	161.5	47.0	54.2	47.8	12.5

1/ See glossary for stand-size classes (page 3) (Table 3 cont. on next page)

Table 4.--*Area of commercial forest land, by county and ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

County	All ownerships	National Forest	Other federal	State, county and municipal	Forest industry	Farmer and miscellaneous private
Barry	182.6	47.5	--	.2	--	134.9
Christian	128.4	46.0	--	--	--	82.4
Douglas	246.1	37.8	--	.2	.3	207.8
Howell	270.6	47.1	--	.2	6.0	217.3
McDonald	166.9	--	--	2.1	--	164.8
Newton	103.6	--	3.0	1.3	--	99.3
Ozark	236.3	34.6	--	5.2	6.0	190.5
Stone	124.1	12.6	--	.1	--	111.4
Taney	197.5	52.2	--	.1	--	145.2
Texas	373.6	43.8	--	.4	27.2	302.2
Webster	120.2	--	--	.7	--	119.5
Wright	161.5	6.9	--	--	--	154.6
All counties	2,311.4	328.5	3.0	10.5	39.5	1,929.9

Table 5.--*Area of commercial forest land, by stand-volume and ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Stand volume per acre (board feet) 1/	All ownerships	National Forest	Other federal	State, county, and municipal	Forest industry	Farmer and miscellaneous private
Less than 1,500	1,830.7	210.4	1.4	8.8	31.7	1,578.4
1,500 to 5,000	465.2	115.4	1.6	1.7	7.6	338.9
More than 5,000	15.5	2.7	--	--	.2	12.6
All classes	2,311.4	328.5	3.0	10.5	39.5	1,929.9

1/ International 1/4-inch rule.

Table 6.--*Area of commercial forest land, by area-condition and ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Area-condition class 1/	All ownerships	National Forest	Other federal	State, county and municipal;	Forest industry	Farmer and miscellaneous private
50	50.0	25.3	--	--	3.0	21.7
60	486.7	164.2	--	--	19.8	302.7
70	1,774.7	139.0	3.0	10.5	16.7	1,605.5
All classes	2,311.4	328.5	3.0	10.5	39.5	1,929.9

1/ See glossary for area-condition classes (page 2).

Table 7.--*Area of commercial forest land, by site and ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Site class (cubic feet of growth per acre per year)	All ownerships	National Forest	Other federal	State, county and municipal	Forest industry	Farmer and miscellaneous private
85-119	80.6	11.4	--	--	1.4	67.8
50-84	643.8	46.7	3.0	1.6	5.6	586.9
Less than 50	1,587.0	270.4	--	8.9	32.5	1,275.2
All classes	2,311.4	328.5	3.0	10.5	39.5	1,929.9

Table 8.--*Area of commercial forest land, by forest type and ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type	All ownerships	National Forest 1/	Other federal	State, county and municipal	Forest industry	Farmer and miscellaneous private
Shortleaf pine	17.8	17.6	--	--	--	.2
Eastern redcedar	12.6	8.9	--	--	--	3.7
Eastern redcedar-hardwood	85.1	61.3	--	--	--	23.8
Shortleaf pine-oak	65.1	36.9	--	--	--	28.2
Post-blackjack oak	723.8	26.2	3.0	1.8	14.0	678.8
Black-scarlet oak	910.3	134.0	--	5.3	16.6	754.4
White oak	287.5	39.1	--	--	5.4	243.0
Elm-ash-cottonwood	29.5	.9	--	--	--	28.6
Maple-beech	13.7	--	--	1.6	--	12.1
Nonstocked 2/	166.0	3.6	--	1.8	3.5	157.1
All forest types	2,311.4	328.5	3.0	10.5	39.5	1,929.9

1/ Estimates of area of some forest types for National Forest owner differ from those shown in current timber management plans for the National Forests in Missouri.

2/ See glossary for stand-size classes (page 3).

Table 9.--*Area of commercial forest land, by forest type and stand-age class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type	All ages	Stand-age class (years)											
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-119	120+
Shortleaf pine	17.8	--	4.8	2.4	2.4	--	2.1	6.1	--	--	--	--	--
Eastern redcedar	12.6	--	3.2	3.1	6.3	--	--	--	--	--	--	--	--
Eastern redcedar-hardwood	85.1	2.7	26.9	16.2	14.3	11.1	7.1	2.3	--	2.2	--	2.3	--
Shortleaf pine-oak	65.1	9.6	--	6.8	5.7	6.2	23.4	9.8	3.6	--	--	--	--
Post-blackjack oak	723.8	105.3	160.8	57.3	80.3	81.0	70.2	47.0	51.0	15.8	11.8	23.7	19.6
Black-scarlet oak	910.3	132.6	124.9	66.2	133.5	114.9	99.0	107.3	60.0	15.8	28.1	20.0	8.0
White oak	287.5	21.1	14.1	19.9	10.4	57.7	47.2	62.3	18.2	7.5	14.6	14.5	--
Elm-ash-cottonwood	29.5	4.4	4.4	3.5	3.5	2.8	8.2	2.7	--	--	--	--	--
Maple-beech	13.7	--	--	--	3.5	6.8	--	--	--	3.4	--	--	--
Nonstocked 1/	166.0	43.6	40.3	19.4	7.6	17.6	7.4	7.6	11.5	--	3.8	--	7.2
All forest types	2,311.4	319.3	379.4	194.8	267.5	298.1	264.6	245.1	144.3	44.7	58.3	60.5	34.8

1/ See glossary for stand-size classes (page 3).

Table 10.--*Area of commercial forest land, by forest type and site-index class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type	All classes	Site-index class (height in feet at 50 years)							
		20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+
Shortleaf pine	17.8	--	--	6.9	6.5	4.4	--	--	--
Eastern redcedar	12.6	6.3	6.3	--	--	--	--	--	--
Eastern redcedar-hardwood	85.1	2.7	42.6	26.9	6.7	3.5	--	2.7	--
Shortleaf pine-oak	65.1	--	--	16.8	22.0	19.1	7.2	--	--
Post-blackjack oak	723.8	19.0	93.8	209.1	200.5	110.0	72.9	18.5	--
Black-scarlet oak	910.3	3.6	8.1	115.1	356.4	182.2	174.7	66.2	4.0
White oak	287.5	--	7.0	47.2	151.0	58.2	17.4	6.7	--
Elm-ash-cottonwood	29.5	--	--	--	2.8	16.1	6.2	--	4.4
Maple-beech	13.7	--	--	--	7.0	3.4	3.3	--	--
Nonstocked 1/	166.0	10.9	25.7	29.6	60.4	7.6	20.6	11.2	--
All forest types	2,311.4	42.5	183.5	451.6	813.3	404.5	302.3	105.3	8.4

1/ See glossary for stand-size classes (page 3).

Table 11.--*Area of commercial forest land, by forest type and basal-area class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type	All classes	Basal area class (square feet per acre)						
		0-19	20-39	40-59	60-79	80-99	100-119	120-139
Shortleaf pine	17.8	--	--	4.1	2.4	4.4	6.9	--
Eastern redcedar	12.6	--	6.3	3.2	--	3.1	--	--
Eastern redcedar-hardwood	85.1	5.4	5.7	27.3	24.3	16.6	5.8	--
Shortleaf pine-oak	65.1	--	--	29.8	14.0	11.0	7.7	2.6
Post-blackjack oak	723.8	18.1	123.4	210.7	224.5	92.8	54.3	--
Black-scarlet oak	910.3	44.7	79.4	318.0	231.0	189.5	47.7	--
White oak	287.5	--	31.7	77.6	105.5	61.9	7.2	3.6
Elm-ash-cottonwood	29.5	--	14.3	5.5	7.0	2.7	--	--
Maple-beech	13.7	--	--	7.0	6.7	--	--	--
Nonstocked 1/	166.0	14.9	58.0	70.7	18.7	3.7	--	--
All forest types	2,311.4	83.1	318.8	753.9	634.1	385.7	129.6	6.2

1/ See glossary for stand-size classes (page 3).

Table 12.--*Area of commercial forest land, by forest type, stand-size, and site class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type and stand-size class	All site classes	85 to 120 cu. ft.	50 to 85 cu. ft.	Less than 50 cu. ft.
Shortleaf pine				
Sawtimber	8.2	--	6.2	2.0
Poletimber	9.6	--	4.8	4.8
Sapling and seedling	--	--	--	--
All stands	17.8	--	11.0	6.8
Eastern redcedar				
Sawtimber	--	--	--	--
Poletimber	--	--	--	--
Sapling and seedling	12.6	--	--	12.6
All stands	12.6	--	--	12.6
Eastern redcedar-hardwood				
Sawtimber	9.0	--	--	9.0
Poletimber	14.1	--	3.5	10.6
Sapling and seedling	62.0	--	2.7	59.3
All stands	85.1	--	6.2	78.9
Shortleaf pine-oak				
Sawtimber	30.1	--	10.8	19.3
Poletimber	22.1	--	7.7	14.4
Sapling and seedling	12.9	--	6.5	6.4
All stands	65.1	--	25.0	40.1
Post-blackjack oak				
Sawtimber	177.1	--	35.6	141.5
Poletimber	258.9	3.8	77.2	177.9
Sapling and seedling	287.8	7.2	54.7	225.9
All stands	723.8	11.0	167.5	545.3
Black-scarlet oak				
Sawtimber	331.6	23.8	95.9	211.9
Poletimber	306.1	19.7	161.1	125.3
Sapling and seedling	272.6	14.6	65.9	192.1
All stands	910.3	58.1	322.9	529.3
White oak				
Sawtimber	128.9	3.6	29.5	95.8
Poletimber	116.4	--	20.2	96.2
Sapling and seedling	42.2	--	7.0	35.2
All stands	287.5	3.6	56.7	227.2
Elm-ash-cottonwood				
Sawtimber	13.7	--	8.2	5.5
Poletimber	7.0	--	7.0	--
Sapling and seedling	8.8	4.4	4.4	--
All stands	29.5	4.4	19.6	5.5
Maple-beech				
Sawtimber	6.7	--	6.7	--
Poletimber	7.0	--	--	7.0
Sapling and seedling	--	--	--	--
All stands	13.7	--	6.7	7.0
Nonstocked 1/	166.0	3.5	28.2	134.3
Total all types	2,311.4	80.6	643.8	1,587.0

1/ See glossary for stand-size classes (page 3).

Table 13.--*Area of commercial forest land, by stocking class based on selected stand components, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Stocking percentage	Stocking classified in terms of					
	All trees	Growing-stock trees			Rough and rotten trees	Inhibiting vegetation
		Total	Desirable	Acceptable		
140+	18.2	--	--	--	--	--
130-139	18.1	--	--	--	--	--
120-129	155.0	2.4	--	2.4	--	--
110-119	344.6	11.2	--	4.1	--	--
100-109	420.1	28.2	--	23.2	3.6	--
90-99	565.5	32.8	--	32.8	60.3	--
80-89	358.3	67.3	--	50.0	124.0	--
70-79	255.3	137.2	--	128.7	189.8	--
60-69	122.3	224.8	--	204.6	368.1	--
50-59	41.8	324.8	--	307.3	426.2	--
40-49	12.2	400.0	--	438.0	465.1	--
30-39	--	425.9	--	456.2	367.3	--
20-29	--	372.5	15.7	364.8	191.3	--
10-19	--	211.2	41.4	222.6	92.8	--
0-9	--	73.1	2,254.3	76.7	22.9	2,311.4
Total	2,311.4	2,311.4	2,311.4	2,311.4	2,311.4	2,311.4

Table 14.--*Area of commercial forest land, by stocking class of growing-stock trees and stand-size class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Stocking percentage	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas 1/
101 to 133	41.9	11.7	13.9	16.3	--
61 to 100	462.1	161.2	182.7	118.2	--
17 to 60	1,622.6	532.4	533.4	556.8	--
Less than 17	184.8	--	11.2	7.6	166.0
All classes	2,311.4	705.3	741.2	698.9	166.0

1/ See glossary for stand-size classes (page 3).

Table 15.--*Area of noncommercial forest land, by ownership class, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Ownership class	All areas	Productive reserved areas	Unproductive areas
National Forest	13.3	--	13.3
Other public	22.6	22.6	--
Farmer and miscellaneous private	96.0	--	96.0
All ownerships	131.9	22.6	109.3

Table 16.--*Area of noncommercial forest land, by forest type, Southwestern Ozarks, Missouri, 1972*

(Thousand acres)

Forest type	All areas	Productive reserved areas	Unproductive areas
Shortleaf pine	.1	.1	--
Eastern redcedar	25.4	1.0	24.4
Eastern redcedar-hardwood	39.6	.3	39.3
Shortleaf pine-oak	.7	.7	--
Post-blackjack oak	53.1	7.5	45.6
Black-scarlet oak	9.5	9.5	--
White oak	3.0	3.0	--
Elm-ash-cottonwood	.5	.5	--
All forest types	131.9	22.6	109.3

Table 17.--*Number of all live trees on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Thousand trees)

Species	All classes	Diameter class (inches at breast height)													
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods:															
Shortleaf pine	32,982	14,127	8,824	4,601	2,669	1,592	836	282	20	24	7	--	--	--	--
Eastern redcedar	67,360	45,721	15,921	3,752	1,173	585	157	42	9	--	--	--	--	--	--
Total softwoods	100,342	59,848	24,745	8,353	3,842	2,177	993	324	29	24	7	--	--	--	--
Hardwoods:															
Select white oaks	143,131	80,414	25,741	14,810	8,208	5,563	3,746	2,465	1,191	429	227	119	199	19	--
Other white oaks	209,200	115,589	43,769	22,243	9,483	7,063	4,984	3,125	1,483	623	458	177	194	9	--
Select red oaks	22,698	10,441	4,706	2,062	1,870	1,467	796	664	264	127	118	65	109	9	--
Red oaks	279,985	174,139	47,514	20,659	14,722	9,384	5,972	3,489	1,972	825	554	352	339	63	1
Other red oaks	117,727	78,061	19,989	9,005	4,375	2,749	1,728	946	613	158	69	21	13	--	--
Hickory A	58,900	40,465	9,284	4,216	2,341	1,519	625	355	--	75	20	--	--	--	--
Hickory B	153,790	109,708	26,064	9,997	4,422	2,078	879	397	177	50	14	--	4	--	--
Hard maple	9,859	6,004	2,126	1,181	261	67	131	49	33	7	--	--	--	--	--
Soft maple	6,935	6,454	374	--	--	44	30	20	7	--	--	--	3	--	3
Sweetgum	6	--	--	--	--	--	--	--	--	--	6	--	--	--	--
Tupelo and blackgum	13,816	9,595	2,467	1,018	360	107	67	40	109	15	14	16	8	--	--
Ash	18,219	10,663	3,531	1,575	1,128	670	315	178	30	82	26	9	10	2	--
Sycamore	1,395	366	114	315	180	147	111	23	78	15	25	11	--	8	2
Basswood	802	724	--	--	--	73	--	--	--	--	--	--	--	5	--
Black walnut	12,038	4,145	3,926	1,554	1,358	541	283	158	30	25	14	--	4	--	--
Black cherry	1,535	710	217	254	130	145	70	--	--	--	5	--	4	--	--
Elm	48,848	33,870	9,791	3,286	1,098	417	248	62	28	27	7	10	4	--	--
Other hardwoods	166,841	140,984	21,531	2,842	889	324	141	61	52	13	--	4	--	--	--
Noncommercial species	42,956	37,517	4,497	862	80	--	--	--	--	--	--	--	--	--	--
Total hardwoods	1,308,681	859,849	225,641	95,879	50,905	32,358	20,126	12,032	6,067	2,471	1,557	784	891	115	6
All species	1,409,023	919,697	250,386	104,232	54,747	34,535	21,119	12,356	6,096	2,495	1,564	784	891	115	6

Table 18.--*Number of growing-stock trees on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Thousand trees)

Species	All classes	Diameter class (inches at breast height)												
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods:														
Shortleaf pine	27,815	10,679	7,742	4,084	2,631	1,547	814	267	20	24	7	--	--	--
Eastern redcedar	52,936	36,684	13,064	2,357	627	103	101	--	--	--	--	--	--	--
Total softwoods	80,751	47,363	20,806	6,441	3,258	1,650	915	267	20	24	7	--	--	--
Hardwoods:														
Select white oaks	71,993	32,722	17,530	9,142	5,278	3,242	1,935	1,402	506	136	66	12	22	--
Other white oaks	79,038	33,834	20,651	12,258	5,269	3,043	2,190	1,131	519	98	39	6	--	--
Select red oaks	12,936	5,710	2,602	1,117	1,148	1,006	530	503	118	80	43	34	42	3
Red oaks	149,024	81,319	29,166	14,961	9,830	5,851	3,905	2,160	1,008	420	212	95	86	11
Other red oaks	25,286	15,256	5,159	2,964	823	489	277	181	108	17	7	--	5	--
Hickory A	21,885	12,633	4,596	2,069	1,149	791	324	260	--	50	13	--	--	--
Hickory B	58,306	33,752	14,571	5,571	2,326	1,186	526	219	136	12	7	--	--	--
Hard maple	4,036	1,474	1,728	628	98	--	74	13	21	--	--	--	--	--
Soft maple	2,325	2,318	--	--	--	--	--	--	7	--	--	--	--	--
Tupelo and blackgum	4,667	2,544	919	760	281	28	32	13	64	15	--	11	--	--
Ash	3,466	1,510	761	304	381	264	104	67	10	42	12	4	5	2
Sycamore	1,055	366	--	261	145	96	66	23	54	15	18	11	--	--
Basswood	403	350	--	--	--	53	--	--	--	--	--	--	--	--
Black walnut	4,056	354	1,642	844	591	301	173	97	22	18	14	--	--	--
Black cherry	503	353	108	--	--	24	14	--	--	--	--	--	4	--
Elm	8,757	3,745	3,384	847	544	137	52	25	--	18	--	5	--	--
Other hardwoods	14,932	11,406	2,791	402	124	70	81	26	27	5	--	--	--	--
Total hardwoods	462,668	239,646	105,608	52,128	27,987	16,581	10,283	6,120	2,600	926	431	178	164	16
All species	543,419	287,009	126,414	58,569	31,245	18,231	11,198	6,387	2,620	950	438	178	164	16

Table 19.--*Number of short-log trees on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Thousand trees)

Species	All classes	Diameter class (inches at breast height)								
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods:										
Eastern redcedar	132	112	--	20	--	--	--	--	--	--
Total softwoods	132	112	--	20	--	--	--	--	--	--
Hardwoods:										
Select white oaks	1,595	--	630	496	272	123	44	--	24	6
Other white oaks	1,498	--	840	413	143	71	19	--	9	3
Select red oaks	133	--	87	12	11	--	7	10	6	--
Red oaks	1,222	--	428	297	344	58	14	37	39	5
Other red oaks	200	--	121	43	23	9	--	--	4	--
Hickory A	71	--	21	42	--	8	--	--	--	--
Hickory B	147	--	107	29	11	--	--	--	--	--
Hard maple	30	--	18	--	12	--	--	--	--	--
Soft maple	24	--	15	9	--	--	--	--	--	--
Tupelo and blackgum	18	--	--	14	--	--	--	--	4	--
Ash	103	--	55	48	--	--	--	--	--	--
Basswood	3	--	--	--	--	--	--	--	--	3
Black walnut	58	--	17	34	--	7	--	--	--	--
Elm	78	--	52	15	11	--	--	--	--	--
Other hardwoods	23	--	12	11	--	--	--	--	--	--
Total hardwoods	5,203	--	2,403	1,463	827	276	84	47	86	17
All species	5,335	112	2,403	1,483	827	276	84	47	86	17

Table 20.--*Net volume of growing stock and sawtimber on commercial forest land, by species, Southwestern Ozarks, Missouri, 1959 and 1972*

Species	Growing stock		Sawtimber	
	1959[1]	1972	1959[1]	1972
	Million cubic feet		Million board feet[2]	
Softwoods:				
Shortleaf pine	91.2	54.3	206.9	186.7
Eastern redcedar	5.3	9.5	15.3	10.5
Total softwoods	96.5	63.8	222.2	197.2
Hardwoods:				
Select white oaks	140.3	150.6	382.0	379.6
Other white oaks	214.1	138.9	535.0	297.7
Select red oaks	50.2	49.2	169.6	164.6
Red oaks	299.4	297.3	699.1	749.2
Other red oaks	11.9	22.6	27.1	48.6
Hickory A	53.9	28.1	28.2	53.4
Hickory B	43.3	46.3	48.6	71.0
Hard maple	3.2	3.9	3.0	8.4
Soft maple	--	.3	--	1.3
Tupelo and blackgum	3.8	6.0	15.5	13.7
Ash	8.0	10.8	26.7	25.9
Sycamore	2.4	8.1	5.1	26.0
Basswood	.1	.4	--	--
Black walnut	8.3	13.3	16.4	26.2
Black cherry	4.9	.7	1.9	2.7
Elm	11.9	6.9	27.9	10.1
Other hardwoods	5.7	3.9	8.5	9.6
Total hardwoods	861.4	787.3	1,994.6	1,888.0
All species	957.9	851.1	2,216.8	2,085.2

1/ Figures have been adjusted from those published previously for 1959 to conform to 1972 volumes because of changes in survey definitions and procedures.

2/ International 1/4-inch rule.

Table 21.--*Net volume on commercial forest land for Missouri's Southwestern Ozarks Survey Unit and for individual counties within Unit, by species and kind of material, 1972*

ALL COUNTIES

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet[1/]			Thousand cords
Softwoods:							
Shortleaf pine	687.8	274.8	413.0	186.7	111.9	74.8	10.1
Eastern redcedar	120.2	95.3	24.9	10.5	1.7	8.8	81.7
Total softwoods	808.0	370.1	437.9	197.2	113.6	83.6	91.8
Hardwoods:							
Select white oaks	1,906.3	942.6	963.7	379.6	269.5	110.1	1,296.3
Other white oaks	1,758.2	999.5	758.7	297.7	193.1	104.6	1,690.3
Select red oaks	622.8	213.4	409.4	164.6	112.1	52.5	230.6
Red oaks	3,763.3	1,856.5	1,906.8	749.2	437.0	312.2	1,825.0
Other red oaks	286.2	169.2	117.0	48.6	29.5	19.1	779.2
Hickory A	355.7	215.7	140.0	53.4	21.8	31.6	215.9
Hickory B	585.6	398.2	187.4	71.0	34.7	36.3	309.6
Hard maple	48.9	22.8	26.1	8.4	7.0	1.4	37.8
Soft maple	3.3	--	3.3	1.3	1.3	--	16.5
Sweetgum	--	--	--	--	--	--	1.7
Tupelo and blackgum	75.6	38.4	37.2	13.7	9.0	4.7	36.2
Ash	137.1	65.0	72.1	25.9	19.4	6.5	130.9
Sycamore	102.8	33.5	69.3	26.0	16.9	9.1	23.5
Basswood	5.4	5.4	--	--	--	--	5.2
Black walnut	167.2	93.3	73.9	26.2	12.5	13.7	92.0
Black cherry	9.2	3.2	6.0	2.7	.9	1.8	30.5
Elm	87.3	61.6	25.7	10.1	5.5	4.6	122.7
Other hardwoods	50.0	23.1	26.9	9.6	7.1	2.5	93.4
Nomcommercial species	--	--	--	--	--	--	17.4
Total hardwoods	9,964.9	5,141.4	4,823.5	1,888.0	1,177.3	710.7	6,954.7
All species	10,772.9	5,511.5	5,261.4	2,085.2	1,290.9	794.3	7,046.5

BARRY COUNTY

Softwoods:							
Shortleaf pine	66.8	31.7	35.1	16.3	8.3	8.0	.7
Eastern redcedar	11.9	9.5	2.4	1.0	.3	.7	8.3
Total softwoods	78.7	41.2	37.5	17.3	8.6	8.7	9.0
Hardwoods							
Select white oaks	151.2	74.0	77.2	30.4	22.0	8.4	102.2
Other white oaks	136.9	77.5	59.4	23.4	14.9	8.5	128.1
Select red oaks	50.7	18.5	32.2	12.9	8.9	4.0	19.0
Red oaks	297.3	144.6	152.7	60.0	36.0	24.0	141.9
Other red oaks	21.8	12.9	8.9	3.7	2.2	1.5	57.7
Hickory A	27.8	17.0	10.8	4.1	1.7	2.4	16.8
Hickory B	45.1	30.6	14.5	5.5	2.7	2.8	23.6
Hard maple	3.7	1.7	2.0	.6	.5	.1	3.1
Soft maple	.2	--	.2	.1	.1	--	1.1
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	5.9	3.1	2.8	1.0	.7	.3	2.7
Ash	11.0	5.0	6.0	2.1	1.6	.5	10.9
Sycamore	7.6	2.6	5.0	1.9	1.2	.7	1.7
Basswood	.4	.4	--	--	--	--	.3
Black walnut	13.1	7.4	5.7	2.0	1.0	1.0	6.6
Black cherry	.7	.2	.5	.2	.1	.1	2.1
Elm	7.1	5.3	1.8	.7	.3	.4	9.9
Other hardwoods	4.4	1.8	2.6	.9	.7	.2	7.0
Noncommercial species	--	--	--	--	--	--	1.3
Total hardwoods	784.9	402.6	382.3	149.5	94.6	54.9	536.1
All species	863.6	443.8	419.8	166.8	103.2	63.6	545.1

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

CHRISTIAN COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet 1/			Thousand cords
Softwoods:							
Shortleaf pine	39.7	15.7	24.0	10.8	6.4	4.4	.6
Eastern redcedar	7.8	6.2	1.6	.6	.1	.5	5.1
Total softwoods	47.5	21.9	25.6	11.4	6.5	4.9	5.7
Hardwoods							
Select white oaks	105.9	53.2	52.7	20.8	14.6	6.2	72.5
Other white oaks	94.7	54.3	40.4	15.8	9.9	5.9	91.0
Select red oaks	33.8	12.1	21.7	8.8	5.8	3.0	12.6
Red oaks	203.6	101.9	101.7	39.9	22.6	17.3	98.6
Other red oaks	15.3	9.1	6.2	2.6	1.5	1.1	41.6
Hickory A	19.8	12.1	7.7	3.0	1.2	1.8	11.9
Hickory B	31.9	21.8	10.1	3.8	1.8	2.0	16.9
Hard maple	2.7	1.3	1.4	.5	.4	.1	2.2
Soft maple	.4	--	.4	.1	.1	--	1.5
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	4.1	2.1	2.0	.7	.5	.2	1.9
Ash	8.5	4.1	4.4	1.6	1.2	.4	8.1
Sycamore	6.9	2.1	4.8	1.8	1.2	.6	1.8
Basswood	.3	.3	--	--	--	--	.3
Black walnut	9.4	5.4	4.0	1.4	.6	.8	5.0
Black cherry	.6	.2	.4	.2	.1	.1	1.8
Elm	4.9	3.5	1.4	.5	.3	.2	7.3
Other hardwoods	3.0	1.4	1.6	.6	.4	.2	5.7
Noncommercial species	--	--	--	--	--	--	1.0
Total hardwoods	545.8	284.9	260.9	102.1	62.2	39.9	381.8
All species	593.3	306.8	286.5	113.5	68.7	44.8	387.5

DOUGLAS COUNTY

Softwoods:							
Shortleaf pine	96.8	37.6	59.2	26.5	16.2	10.3	1.3
Eastern redcedar	8.8	6.7	2.1	.9	--	.9	5.8
Total softwoods	105.6	44.3	61.3	27.4	16.2	11.2	7.1
Hardwoods:							
Select white oaks	202.8	100.0	102.8	40.5	28.6	11.9	136.8
Other white oaks	184.2	105.0	79.2	31.1	20.3	10.8	180.8
Select red oaks	65.8	23.2	42.6	17.1	11.5	5.6	23.5
Red oaks	399.6	197.7	201.9	79.4	46.2	33.2	194.2
Other red oaks	30.3	18.0	12.3	5.1	3.1	2.0	84.7
Hickory A	37.9	23.1	14.8	5.6	2.3	3.3	23.0
Hickory B	61.9	41.7	20.2	7.6	3.7	3.9	33.5
Hard maple	5.3	2.5	2.8	.9	.7	.2	3.8
Soft maple	.3	--	.3	.1	.1	--	1.6
Sweetgum	--	--	--	--	--	--	.2
Tupelo and blackgum	8.2	4.3	3.9	1.5	1.0	.5	3.9
Ash	13.6	6.7	6.9	2.5	1.9	.6	12.4
Sycamore	10.4	3.4	7.0	2.6	1.7	.9	2.3
Basswood	.6	.6	--	--	--	--	.6
Black walnut	17.2	9.6	7.6	2.7	1.3	1.4	10.6
Black cherry	.9	.3	.6	.3	.1	.2	2.9
Elm	8.6	5.7	2.9	1.1	.6	.5	12.1
Other hardwoods	4.6	2.4	2.2	.9	.6	.3	9.6
Noncommercial species	--	--	--	--	--	--	1.9
Total hardwoods	1,052.2	544.2	508.0	199.0	123.7	75.3	738.4
All species	1,157.8	588.5	569.3	226.4	139.9	86.5	745.5

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

Species	Growing stock: Total	Growing stock: Poletimber trees	Growing stock: Sawtimber trees	Sawtimber: Total	Sawtimber: In sawtimber stands	Sawtimber: Other stands	Rough and rotten trees
	Thousand cords			Million board feet[1/]			Thousand cords
HOWELL COUNTY							
Softwoods:							
Shortleaf pine	94.7	39.9	54.8	24.8	15.3	9.5	1.3
Eastern redcedar	9.6	7.5	2.1	.9	--	.9	5.8
Total softwoods	104.3	47.4	56.9	25.7	15.3	10.4	7.1
Hardwoods							
Select white oaks	228.6	109.7	118.9	46.9	34.5	12.4	152.5
Other white oaks	212.1	118.8	93.3	36.7	25.2	11.5	200.9
Select red oaks	76.1	24.5	51.6	20.7	14.8	5.9	26.6
Red oaks	461.3	218.2	243.1	95.6	60.1	35.5	223.0
Other red oaks	34.5	20.0	14.5	6.0	3.8	2.2	93.1
Hickory A	42.5	25.5	17.0	6.4	2.8	3.6	26.1
Hickory B	69.2	46.2	23.0	8.7	4.5	4.2	37.3
Hard maple	5.9	2.6	3.3	1.1	.9	.2	4.3
Soft maple	.2	--	.2	.1	.1	--	1.2
Sweetgum	--	--	--	--	--	--	.2
Tupelo and blackgum	9.3	4.8	4.5	1.7	1.2	.5	4.5
Ash	14.8	6.8	8.0	2.9	2.3	.6	13.0
Sycamore	9.8	3.1	6.7	2.5	1.8	.7	2.0
Basswood	.6	.6	--	--	--	--	.5
Black walnut	18.5	9.9	8.6	3.1	1.6	1.5	10.8
Black cherry	.9	.3	.6	.3	.1	.2	3.3
Elm	9.6	6.4	3.2	1.3	.7	.6	13.0
Other hardwood	5.0	2.4	2.6	.9	.7	.2	10.2
Noncommercial species	--	--	--	--	--	--	2.0
Total hardwoods	1,198.9	599.8	599.1	234.9	155.1	79.8	824.5
All species	1,303.2	647.2	656.0	260.6	170.4	90.2	831.6
MC DONALD COUNTY							
Softwoods:							
Shortleaf pine	33.1	12.7	20.4	9.3	5.4	3.9	.6
Eastern redcedar	6.0	4.7	1.3	.6	--	.6	3.3
Total softwoods	39.1	17.4	21.7	9.9	5.4	4.5	3.9
Hardwoods							
Select white oaks	146.8	72.3	74.5	29.3	21.0	8.3	95.5
Other white oaks	137.1	78.8	58.3	22.9	15.5	7.4	126.5
Select red oaks	48.0	15.4	32.6	13.1	9.0	4.1	16.8
Red oaks	298.8	147.8	151.0	59.4	34.7	24.7	141.1
Other red oaks	22.9	13.5	9.4	3.9	2.4	1.5	59.4
Hickory A	28.0	16.8	11.2	4.3	1.7	2.6	16.3
Hickory B	45.7	31.1	14.6	5.6	2.8	2.8	23.2
Hard maple	3.7	1.7	2.0	.6	.5	.1	2.8
Soft maple	.2	--	.2	.1	.1	--	1.1
Sweetgum	--	--	--	--	--	--	.2
Tupelo and blackgum	5.9	3.0	2.9	1.1	.7	.4	2.8
Ash	10.0	4.8	5.2	1.9	1.5	.4	8.7
Sycamore	8.0	2.6	5.4	2.0	1.2	.8	1.6
Basswood	.4	.4	--	--	--	--	.4
Black walnut	12.3	6.5	5.8	2.1	1.0	1.1	6.7
Black cherry	.7	.3	.4	.2	.1	.1	2.2
Elm	6.2	4.2	2.0	.8	.4	.4	8.3
Other hardwoods	3.4	1.7	1.7	.6	.4	.2	6.8
Noncommercial species	--	--	--	--	--	--	1.2
Total hardwoods	778.1	400.9	377.2	147.9	93.0	54.9	521.6
All species	817.2	418.3	398.9	157.8	98.4	59.4	525.5

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

NEWTON COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet[1/]			Thousand cords
Softwoods:							
Shortleaf pine	19.9	7.8	12.1	5.6	3.3	2.3	.4
Eastern redcedar	4.3	3.5	.8	.3	--	.3	2.2
Total softwoods	24.2	11.3	12.9	5.9	3.3	2.6	2.6
Hardwoods:							
Select white oaks	89.9	43.9	46.0	18.1	13.5	4.6	59.9
Other white oaks	82.1	46.0	36.1	14.2	9.9	4.3	77.7
Select red oaks	28.9	8.8	20.1	8.0	5.8	2.2	10.1
Red oaks	175.5	83.8	91.7	36.0	22.4	13.6	86.0
Other red oaks	13.5	7.7	5.8	2.4	1.6	.8	36.3
Hickory A	16.8	10.0	6.8	2.6	1.2	1.4	10.1
Hickory B	26.7	17.8	8.9	3.4	1.8	1.6	14.5
Hard maple	2.2	1.0	1.2	.4	.4	--	1.7
Soft maple	.2	--	.2	.1	.1	--	1.0
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	3.5	1.7	1.8	.6	.4	.2	1.7
Ash	6.5	3.0	3.5	1.3	1.0	.3	5.5
Sycamore	4.8	1.3	3.5	1.3	.9	.4	1.2
Basswood	.2	.2	--	--	--	--	.2
Black walnut	7.4	3.9	3.5	1.3	.6	.7	4.1
Black cherry	.4	.1	.3	.1	--	.1	2.0
Elm	3.8	2.6	1.2	.5	.3	.2	6.1
Other hardwoods	2.2	1.2	1.0	.4	.3	.1	5.1
Noncommercial species	--	--	--	--	--	--	.9
Total hardwoods	464.6	233.0	231.6	90.7	60.2	30.5	324.2
All species	488.8	244.3	244.5	96.6	63.5	33.1	326.8

OZARK COUNTY

Softwoods:							
Shortleaf pine	60.1	24.3	35.8	16.4	9.6	6.8	1.0
Eastern redcedar	13.6	10.3	3.3	1.4	.5	.9	9.9
Total softwoods	73.7	34.6	39.1	17.8	10.1	7.7	10.9
Hardwoods:							
Select white oaks	197.6	96.3	101.3	39.9	29.0	10.9	133.1
Other white oaks	178.9	100.5	78.4	30.8	20.5	10.3	172.6
Select red oaks	64.2	21.1	43.1	17.3	12.2	5.1	25.3
Red oaks	381.9	185.5	196.4	77.1	46.4	30.7	186.4
Other red oaks	29.0	17.0	12.0	5.0	3.1	1.9	79.6
Hickory A	36.5	22.1	14.4	5.5	2.4	3.1	22.1
Hickory B	59.0	40.0	19.0	7.2	3.7	3.5	31.1
Hard maple	4.8	2.1	2.7	.9	.8	.1	3.9
Soft maple	.5	--	.5	.2	.2	--	2.1
Sweetgum	--	--	--	--	--	--	.2
Tupelo and blackgum	7.6	3.8	3.8	1.4	.9	.5	3.8
Ash	15.4	7.2	8.2	3.0	2.3	.7	14.9
Sycamore	12.1	3.8	8.3	3.1	2.0	1.1	3.0
Basswood	.5	.5	--	--	--	--	.6
Black walnut	18.0	10.2	7.8	2.8	1.4	1.4	9.0
Black cherry	1.0	.3	.7	.3	.1	.2	2.8
Elm	8.9	6.4	2.5	1.0	.6	.4	12.4
Other hardwoods	6.2	2.3	3.9	1.3	1.0	.3	9.5
Noncommercial species	--	--	--	--	--	--	1.8
Total hardwoods	1,022.1	519.1	503.0	196.8	126.6	70.2	714.2
All species	1,095.8	553.7	542.1	214.6	136.7	77.9	725.1

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

STONE COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet 1/			Thousand cords
Softwoods:							
Shortleaf pine	26.6	10.7	15.9	7.3	4.1	3.2	.5
Eastern redcedar	9.6	8.2	1.4	.6	.1	.5	6.1
Total softwoods	36.2	18.9	17.3	7.9	4.2	3.7	6.6
Hardwoods:							
Select white oaks	101.6	51.7	49.9	19.6	13.6	6.0	70.8
Other white oaks	93.6	53.3	40.3	15.7	9.6	6.1	88.2
Select red oaks	33.5	12.3	21.2	8.6	5.7	2.9	12.5
Red oaks	196.9	98.8	98.1	38.5	21.7	16.8	94.2
Other red oaks	14.9	8.9	6.0	2.5	1.5	1.0	40.2
Hickory A	18.6	11.3	7.3	2.8	1.1	1.7	11.1
Hickory B	31.3	21.7	9.6	3.6	1.8	1.8	16.5
Hard maple	2.5	1.2	1.3	.4	.3	.1	2.2
Soft maple	.2	--	.2	.1	.1	--	1.1
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	4.1	2.0	2.1	.8	.5	.3	1.9
Ash	8.1	3.6	4.5	1.5	1.0	.5	8.1
Sycamore	5.9	1.9	4.0	1.5	1.0	.5	1.5
Basswood	.3	.3	--	--	--	--	.3
Black walnut	9.5	5.4	4.1	1.4	.6	.8	4.6
Black cherry	.5	.2	.3	.2	.1	.1	1.8
Elm	5.5	4.2	1.3	.5	.3	.2	7.6
Other hardwoods	2.8	1.3	1.5	.5	.4	.1	5.2
Noncommercial species	--	--	--	--	--	--	.9
Total hardwoods	529.8	278.1	251.7	98.2	59.3	38.9	368.8
All species	566.0	297.0	269.0	106.1	63.5	42.6	375.4

TANEY COUNTY

Softwoods:							
Shortleaf pine	29.3	11.6	17.7	8.1	3.6	4.5	.7
Eastern redcedar	23.2	18.7	4.5	1.9	.7	1.2	19.3
Total softwoods	52.5	30.3	22.2	10.0	4.3	5.7	20.0
Hardwoods:							
Select white oaks	133.0	66.9	66.1	25.9	17.2	8.7	107.3
Other white oaks	132.1	73.2	58.9	22.8	12.4	10.4	141.5
Select red oaks	45.4	17.7	27.7	11.2	7.3	3.9	21.3
Red oaks	246.9	125.8	121.1	47.2	24.2	23.0	133.2
Other red oaks	20.0	12.0	8.0	3.4	1.9	1.5	61.3
Hickory A	24.4	15.0	9.4	3.6	1.3	2.3	16.5
Hickory B	44.4	31.3	13.1	5.0	2.2	2.8	24.2
Hard maple	3.7	1.8	1.9	.6	.5	.1	3.5
Soft maple	.1	--	.1	--	--	--	1.1
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	5.2	2.4	2.8	1.0	.6	.4	2.5
Ash	11.7	5.3	6.4	2.1	1.3	.8	15.6
Sycamore	6.8	2.7	4.1	1.5	1.1	.4	1.7
Basswood	.5	.5	--	--	--	--	.3
Black walnut	15.0	9.4	5.6	1.9	1.0	.9	7.6
Black cherry	.6	.2	.4	.2	--	.2	2.2
Elm	9.4	7.5	1.9	.7	.4	.3	12.4
Other hardwoods	5.7	2.0	3.7	1.2	1.0	.2	6.7
Noncommercial species	--	--	--	--	--	--	1.4
Total hardwoods	704.9	373.7	331.2	128.3	72.4	55.9	560.4
All species	757.4	404.0	353.4	138.3	76.7	61.6	580.4

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

TEXAS COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet 1/			Thousand cords
Softwoods:							
Shortleaf pine	162.9	60.2	102.7	45.4	30.5	14.9	2.0
Eastern redcedar	13.1	10.1	3.0	1.3	--	1.3	9.1
Total softwoods	176.0	70.3	105.7	46.7	30.5	16.2	11.1
Hardwoods:							
Select white oaks	310.3	155.5	154.8	61.1	42.1	19.0	207.4
Other white oaks	287.7	167.2	120.5	47.4	30.5	16.9	273.8
Select red oaks	100.2	35.3	64.9	26.1	16.9	9.2	35.9
Red oaks	630.4	317.8	312.6	123.1	69.1	54.0	299.0
Other red oaks	47.5	28.7	18.8	7.8	4.6	3.2	127.4
Hickory A	58.4	35.6	22.8	8.7	3.3	5.4	35.1
Hickory B	97.0	66.2	30.8	11.7	5.4	6.3	50.2
Hard maple	8.0	3.9	4.1	1.3	1.1	.2	5.7
Soft maple	.3	--	.3	.1	.1	--	1.8
Sweetgum	--	--	--	--	--	--	.2
Tupelo and blackgum	12.6	6.6	6.0	2.2	1.4	.8	6.0
Ash	19.7	9.8	9.9	3.6	2.7	.9	18.1
Sycamore	15.2	5.4	9.8	3.7	2.2	1.5	3.0
Basswood	.9	.9	--	--	--	--	.8
Black walnut	26.0	14.3	11.7	4.2	1.9	2.3	15.4
Black cherry	1.5	.6	.9	.4	.1	.3	4.4
Elm	13.0	8.7	4.3	1.7	.9	.8	17.8
Other hardwoods	6.9	3.5	3.4	1.2	.8	.4	14.1
Noncommercial species	--	--	--	--	--	--	2.6
Total hardwoods	1,635.6	860.0	775.6	304.3	183.1	121.2	1,118.7
All species	1,811.6	930.3	881.3	351.0	213.6	137.4	1,129.8

WEBSTER COUNTY

Softwoods:							
Shortleaf pine	23.5	9.1	14.4	6.6	3.9	2.7	.4
Eastern redcedar	5.3	4.3	1.0	.4	--	.4	2.6
Total softwoods	28.8	13.4	15.4	7.0	3.9	3.1	3.0
Hardwoods:							
Select white oaks	105.1	51.6	53.5	21.1	15.4	5.7	69.0
Other white oaks	96.1	54.1	42.0	16.5	11.3	5.2	89.9
Select red oaks	33.9	10.5	23.4	9.4	6.7	2.7	11.7
Red oaks	207.5	100.1	107.4	42.2	25.8	16.4	100.2
Other red oaks	15.9	9.1	6.8	2.8	1.8	1.0	41.8
Hickory A	19.6	11.7	7.9	3.0	1.3	1.7	11.7
Hickory B	31.5	21.1	10.4	3.9	2.0	1.9	16.5
Hard maple	2.7	1.2	1.5	.5	.4	.1	2.0
Soft maple	.2	--	.2	.1	.1	--	.9
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	4.0	2.0	2.0	.7	.5	.2	2.0
Ash	7.3	3.4	3.9	1.4	1.1	.3	6.4
Sycamore	5.6	1.7	3.9	1.5	1.0	.5	1.2
Basswood	.3	.3	--	--	--	--	.3
Black walnut	8.7	4.6	4.1	1.4	.7	.7	4.6
Black cherry	.5	.2	.3	.1	--	.1	2.1
Elm	4.4	3.1	1.3	.5	.3	.2	6.6
Other hardwoods	2.5	1.3	1.2	.5	.4	.1	5.5
Noncommercial species	--	--	--	--	--	--	1.0
Total hardwoods	545.8	276.0	269.8	105.6	68.8	36.8	373.5
All species	574.6	289.4	285.2	112.6	72.7	39.9	376.5

1/ International 1/4-inch rule.

(Table 21 cont. on next page)

(Table 21 cont.)

WRIGHT COUNTY

Species	Growing stock			Sawtimber			Rough and rotten trees
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	Other stands	
	Thousand cords			Million board feet[1]			Thousand cords
Softwoods:							
Shortleaf pine	34.4	13.5	20.9	9.6	5.3	4.3	.6
Eastern redcedar	7.0	5.6	1.4	.6	--	.6	4.2
Total softwoods	41.4	19.1	22.3	10.2	5.3	4.9	4.8
Hardwoods:							
Select white oaks	133.5	67.5	66.0	26.0	18.0	8.0	89.3
Other white oaks	122.7	70.8	51.9	20.4	13.1	7.3	119.3
Select red oaks	42.3	14.0	28.3	11.4	7.5	3.9	15.3
Red oaks	263.6	134.5	129.1	50.8	27.8	23.0	127.2
Other red oaks	20.6	12.3	8.3	3.4	2.0	1.4	56.1
Hickory A	25.4	15.5	9.9	3.8	1.5	2.3	15.2
Hickory B	41.9	28.7	13.2	5.0	2.3	2.7	22.1
Hard maple	3.7	1.8	1.9	.6	.5	.1	2.6
Soft maple	.5	--	.5	.2	.2	--	2.0
Sweetgum	--	--	--	--	--	--	.1
Tupelo and blackgum	5.2	2.6	2.6	1.0	.6	.4	2.5
Ash	10.5	5.3	5.2	2.0	1.5	.5	9.2
Sycamore	9.7	2.9	6.8	2.6	1.6	1.0	2.5
Basswood	.4	.4	--	--	--	--	.6
Black walnut	12.1	6.7	5.4	1.9	.8	1.1	7.0
Black cherry	.9	.3	.6	.2	.1	.1	2.9
Elm	5.9	4.0	1.9	.8	.4	.4	9.2
Other hardwoods	3.3	1.8	1.5	.6	.4	.2	8.0
Noncommercial species	--	--	--	--	--	--	1.4
Total hardwoods	702.2	369.1	333.1	130.7	78.3	52.4	492.5
All species	743.6	388.2	355.4	140.9	83.6	57.3	497.3

1/ International 1/4-inch rule.

Table 22.--*Net volume of timber on commercial forest land, by class of timber and softwoods and hardwoods, Southwestern Ozarks, Missouri, 1972*

(Million cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Growing stock trees:			
Saw log trees:			
Saw log portion	297.5	27.6	269.9
Upper stem portion	118.2	7.0	111.2
Total sawtimber	415.7	34.6	381.1
Poletimber trees	435.4	29.2	406.2
Total growing stock	851.1	63.8	787.3
Cull trees:			
Rough cull trees:			
Sawtimber	153.0	2.8	150.2
Poletimber	236.4	3.3	233.1
Total rough cull	389.4	6.1	383.3
Short log cull trees:			
Sawtimber	82.2	.9	81.3
Poletimber	--	--	--
Total short log	82.2	.9	81.3
Rotten cull trees:			
Sawtimber	59.0	.1	58.9
Poletimber	26.1	.2	25.9
Total rotten cull	85.1	.3	84.8
Total cull	556.7	7.3	549.4
Salvable dead trees:			
Sawtimber	20.5	3.3	17.2
Poletimber	9.8	1.2	8.6
Total salvable dead	30.3	4.5	25.8
All classes	1,438.1	75.6	1,362.5

Table 23.--*Net volume of growing stock, sawtimber, and rough and rotten trees on commercial forest land, by individual species, Southwestern Ozarks, Missouri, 1972*

Species	Growing stock	Sawtimber	Rough and rotten trees
	Million cubic feet	Million board feet[1/]	Million cubic feet
Softwoods:			
Shortleaf pine	54.3	186.7	0.8
Eastern redcedar	9.5	10.5	6.5
Total softwoods	63.8	197.2	7.3
Hardwoods:			
Select white oak group			
Bur oak	--	.1	--
Chinkapin oak	5.9	8.6	14.0
White oak	143.7	369.5	88.3
Swamp chestnut oak	.5	--	--
Swamp white oak	.5	1.4	.1
Other white oak group			
Post oak	138.9	297.7	133.5
Select red oak group			
Northern red oak	48.7	162.2	17.8
Shumard oak	.5	2.4	.4
Red oak group			
Black oak	285.1	720.2	138.7
Scarlet oak	12.2	29.0	5.5
Other red oak group			
Blackjack oak	22.2	47.4	61.5
Water oak	.3	1.2	--
Willow oak	.1	--	--
Hickory A group			
Mockernut hickory	25.2	49.4	15.5
Shagbark hickory	2.4	2.9	1.5
Shellbark hickory	.5	1.1	.1
Hickory B group			
Bitternut hickory	2.0	1.4	1.0
Pignut hickory	36.3	58.4	20.7
Black hickory	8.0	11.2	2.7
Hard maple group			
Sugar maple	3.9	8.4	3.0
Soft maple group			
Silver maple	.3	1.3	1.3
Sweetgum	--	--	.1
Tupelo and blackgum group			
Blackgum	6.0	13.7	2.9
Ash group			
Blue ash	--	--	.1
Green ash	3.1	7.5	1.8
White ash	7.7	18.4	8.4
Sycamore group			
American sycamore	8.1	26.0	1.9
Basswood group			
American basswood	.4	--	.4
Black walnut	13.3	26.2	7.3
Black cherry	.7	2.7	2.4
Elm group			
American elm	3.3	7.3	5.6
Rock elm	1.2	.7	.9
Slippery elm	1.7	2.1	2.4
Winged elm	.7	--	.8
Other hardwoods			
Black locust	--	--	.4
Boxelder	--	--	.3
Butternut	.4	1.0	.5
Common persimmon	.5	--	.8
Cucumber tree	.2	1.0	--
Flowering dogwood	--	--	1.6
Hackberry	2.0	6.2	1.0
Honeylocust	.5	1.4	.2
Ohio buckeye	.1	--	--
Osage orange	--	--	.3
Red mulberry	--	--	.6
Sassafras	.2	--	1.7
Noncommercial	--	--	1.4
Total hardwoods	787.3	1,888.0	549.4
All species	851.1	2,085.2	556.7

1/ International 1/4-inch rule.

(Table 23 continued in next column)

Table 24.--*Net volume of growing stock and sawtimber on commercial forest land, by ownership class and species group, Southwestern Ozarks, Missouri, 1972*

GROWING STOCK

Ownership class	All species	Shortleaf pine	Other softwoods	Soft hardwoods	Hard hardwoods
		Thousand cords			
National Forest	1,820.8	322.6	41.2	33.2	1,423.8
Other federal	14.4	--	--	--	14.4
State, county and municipal	36.9	--	--	--	36.9
Forest industry	184.8	20.4	4.9	15.2	144.3
Farmer and miscellaneous private	8,716.0	344.8	74.1	269.8	8,027.3
All ownerships	10,772.9	687.8	120.2	318.2	9,646.7

SAWTIMBER

	Million board feet[1/]				
National Forest	395.0	109.2	6.2	5.4	274.2
Other federal	3.1	--	--	--	3.1
State, county and municipal	10.0	--	--	--	10.0
Forest industry	35.3	1.6	.2	1.2	32.3
Farmer and miscellaneous private	1,641.8	75.9	4.1	55.3	1,506.5
All ownerships	2,085.2	186.7	10.5	61.9	1,826.1

1/ International 1/4-inch rule.

Table 25.--*Net volume of growing stock on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Thousand cords)

Species	All classes	Diameter class (inches at breast height)											
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods:													
Shortleaf pine	687.8	119.0	155.8	177.3	144.5	67.0	6.8	13.2	4.2	--	--	--	--
Eastern redcedar	120.2	62.1	33.2	10.8	14.1	--	--	--	--	--	--	--	--
Total softwoods	808.0	181.1	189.0	188.1	158.6	67.0	6.8	13.2	4.2	--	--	--	--
Hardwoods:													
Select white oaks	1,906.3	271.7	321.9	349.0	346.5	340.3	166.1	57.4	31.0	6.9	15.5	--	--
Other white oaks	1,758.2	386.7	311.9	301.1	322.1	230.4	145.1	37.2	20.0	3.7	--	--	--
Select red oaks	622.8	37.8	67.8	107.9	88.6	124.7	44.7	30.8	29.2	35.8	47.5	8.0	--
Red oaks	3,763.3	549.7	665.6	641.5	660.3	505.9	311.6	177.6	106.9	58.7	71.3	14.2	--
Other red oaks	286.2	82.2	42.5	44.6	39.7	36.0	31.0	6.8	2.1	--	1.3	--	--
Hickory A	355.7	65.2	69.0	81.7	51.4	59.5	--	22.2	6.7	--	--	--	--
Hickory B	585.6	143.5	133.5	121.1	79.1	51.7	47.4	4.4	4.9	--	--	--	--
Hard maple	48.9	16.1	6.5	--	13.7	3.3	9.3	--	--	--	--	--	--
Soft maple	3.3	--	--	--	--	--	3.3	--	--	--	--	--	--
Tupelo and blackgum	75.6	19.3	16.0	2.9	5.7	2.6	18.7	5.2	--	5.2	--	--	--
Ash	137.1	12.5	27.1	25.3	17.9	15.8	5.0	16.2	7.0	1.4	4.3	4.6	--
Sycamore	102.8	10.6	10.1	12.7	13.4	6.6	19.5	9.1	12.6	8.2	--	--	--
Basswood	5.4	--	--	5.4	--	--	--	--	--	--	--	--	--
Black walnut	167.2	24.3	36.7	32.3	28.3	23.4	6.8	8.3	7.1	--	--	--	--
Black cherry	9.2	--	--	3.2	1.9	--	--	--	--	--	4.1	--	--
Elm	87.3	23.1	25.3	13.1	8.8	5.4	--	8.0	--	3.6	--	--	--
Other hardwoods	50.0	10.9	6.9	5.2	11.6	5.8	8.3	1.3	--	--	--	--	--
Total hardwoods	9,964.9	1,653.6	1,740.8	1,747.0	1,689.0	1,411.4	816.8	384.5	227.5	123.5	144.0	26.8	--
All species	10,772.9	1,834.7	1,929.8	1,935.1	1,847.6	1,478.4	823.6	397.7	231.7	123.5	144.0	26.8	--

Table 26.--*Net volume of sawtimber on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Million board feet)[1/]

Species	All classes	Diameter class (inches at breast height)								
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9
Softwoods:										
Shortleaf pine	186.7	79.0	63.9	33.2	2.9	5.5	2.2	--	--	--
Eastern redcedar	10.5	4.5	6.0	--	--	--	--	--	--	--
Total softwoods	197.2	83.5	69.9	33.2	2.9	5.5	2.2	--	--	--
Hardwoods:										
Select white oaks	379.6	--	132.1	136.3	65.8	23.7	12.4	2.8	6.5	--
Other white oaks	297.7	--	126.1	92.3	55.6	14.2	8.0	1.5	--	--
Select red oaks	164.6	--	36.8	53.5	18.4	13.1	10.6	12.6	17.0	2.6
Red oaks	749.2	--	258.8	199.8	126.0	67.9	43.8	21.0	26.4	5.5
Other red oaks	48.6	--	16.8	15.0	12.6	2.3	.9	--	1.0	--
Hickory A	53.4	--	19.1	24.4	--	7.9	2.0	--	--	--
Hickory B	71.0	--	29.6	19.9	18.4	1.7	1.4	--	--	--
Hard maple	8.4	--	4.5	1.0	2.9	--	--	--	--	--
Soft maple	1.3	--	--	--	1.3	--	--	--	--	--
Tupelo and blackgum	13.7	--	1.6	.8	6.7	2.0	--	2.6	--	--
Ash	25.9	--	5.6	5.1	1.8	5.9	2.8	.6	2.2	1.9
Sycamore	26.0	--	4.3	2.6	6.5	3.3	5.8	3.5	--	--
Black walnut	26.2	--	10.0	7.8	2.4	3.3	2.7	--	--	--
Black cherry	2.7	--	.8	--	--	--	--	--	1.9	--
Elm	10.1	--	3.3	2.0	--	3.5	--	1.3	--	--
Other hardwoods	9.6	--	4.1	2.2	2.8	.5	--	--	--	--
Total hardwoods	1,888.0	--	653.5	562.7	321.2	149.3	90.4	45.9	55.0	10.0
All species	2,085.2	83.5	723.4	595.9	324.1	154.8	92.6	45.9	55.0	10.0

1/ International 1/4-inch rule.

Table 27.--*Net volume of growing stock on commercial forest land, by species and forest type, Southwestern Ozarks, Missouri, 1972*

(Million cubic feet)

Species	All forest types	Shortleaf pine	Eastern redcedar	Eastern redcedar-hardwood	Shortleaf pine-oak	Post-blackjack oak	Black-scarlet oak	White oak	Elm-ash-cottonwood	Maple-beech	Non-stocked
Softwoods:											
Shortleaf pine	54.3	13.5	--	.2	22.4	3.1	9.2	5.3	.3	--	.3
Eastern redcedar	9.5	--	.2	4.3	--	1.6	1.2	1.1	.5	--	.6
Total softwoods	63.8	13.5	.2	4.5	22.4	4.7	10.4	6.4	.8	--	.9
Hardwoods:											
Select white oaks	150.6	.2	.1	2.3	4.9	13.5	60.4	64.9	2.9	.6	.8
Other white oaks	138.9	.4	.1	3.0	2.4	90.5	33.6	5.9	.2	.5	2.3
Select red oaks	49.2	.2	--	1.8	1.9	1.9	36.2	5.3	.2	1.7	--
Red oaks	297.3	1.1	--	1.7	7.9	50.2	208.2	23.9	1.3	.2	2.8
Other red oaks	22.6	--	--	--	.3	14.4	7.5	.4	--	--	--
Hickory A	28.1	--	--	.2	.5	7.4	13.9	5.4	.7	--	--
Hickory B	46.3	--	--	.9	.5	19.9	17.5	6.5	--	.5	.5
Hard maple	3.9	--	--	--	--	.5	1.9	.8	--	.7	--
Soft maple	.3	--	--	--	--	--	--	--	.3	--	--
Tupelo and blackgum	6.0	--	--	--	.2	.3	2.8	2.7	--	--	--
Ash	10.8	--	.1	.6	--	1.3	4.5	2.7	1.3	.3	--
Sycamore	8.1	--	--	.1	--	.2	2.2	2.1	3.5	--	--
Basswood	.4	--	--	--	--	--	--	.2	--	.2	--
Black walnut	13.3	--	--	.8	--	.4	6.8	3.4	.6	1.1	.2
Black cherry	.7	--	--	--	--	.2	--	.3	.2	--	--
Elm	6.9	--	--	.9	--	1.7	2.4	1.3	--	.4	.2
Other hardwoods	3.9	--	--	.8	--	.3	.6	1.5	.4	--	.3
Total hardwoods	787.3	1.9	.3	13.1	18.6	202.7	398.5	127.3	11.6	6.2	7.1
All species	851.1	15.4	.5	17.6	41.0	207.4	408.9	133.7	12.4	6.2	8.0

Table 28.--*Net volume of sawtimber on commercial forest land, by species and forest type, Southwestern Ozarks, Missouri, 1972*

(Million board feet)[1/]

Species	All forest types	Shortleaf pine	Eastern redcedar-hardwood	Shortleaf pine-oak	Post-blackjack oak	Black-scarlet oak	White oak	Elm-ash-cottonwood	Maple-beech	Non-stocked
Softwoods:										
Shortleaf pine	186.7	40.2	1.4	82.5	9.0	33.4	17.2	1.6	--	1.4
Eastern redcedar	10.5	--	2.8	--	1.5	3.9	1.4	--	--	.9
Total softwoods	197.2	40.2	4.2	82.5	10.5	37.3	18.6	1.6	--	2.3
Hardwoods:										
Select white oaks	379.6	.7	2.4	13.5	38.1	161.1	153.1	4.1	3.0	3.6
Other white oaks	297.7	.6	9.6	3.1	181.8	77.6	18.6	.9	2.5	3.0
Select red oaks	164.6	--	2.9	1.9	7.4	129.9	14.3	1.0	7.2	--
Red oaks	749.2	3.1	2.1	24.1	117.7	534.9	60.6	1.8	--	4.9
Other red oaks	48.6	--	--	--	31.8	15.9	.9	--	--	--
Hickory A	53.4	--	--	--	14.9	24.8	12.8	.9	--	--
Hickory B	71.0	--	--	.9	28.7	28.6	10.4	--	1.6	.8
Hard maple	8.4	--	--	--	--	4.8	2.3	--	1.3	--
Soft maple	1.3	--	--	--	--	--	--	1.3	--	--
Tupelo and blackgum	13.7	--	--	--	.8	3.1	9.8	--	--	--
Ash	25.9	--	1.9	--	2.8	13.0	4.9	3.3	--	--
Sycamore	26.0	--	--	--	--	4.5	8.7	12.8	--	--
Black walnut	26.2	--	.4	--	.8	16.6	5.1	1.1	1.3	.9
Black cherry	2.7	--	--	--	--	--	2.0	.7	--	--
Elm	10.1	--	--	--	.7	6.0	1.2	--	2.2	--
Other hardwoods	9.6	--	2.0	--	--	1.0	5.6	1.0	--	--
Total hardwoods	1,888.0	4.4	21.3	43.5	425.5	1,021.8	310.3	28.9	19.1	13.2
All species	2,085.2	44.6	25.5	126.0	436.0	1,059.1	328.9	30.5	19.1	15.5

1/ International 1/4-inch rule.

Table 29.--*Net volume of timber in cull trees on commercial forest land, by species and cull tree class, Southwestern Ozarks, Missouri, 1972*

(Million cubic feet)

Species	All cull trees	Rough trees	Short-log trees[1/]	Rotten trees
Softwoods:				
Shortleaf pine	.8	.7	--	.1
Eastern redcedar	6.5	5.5	.9	.1
Total softwoods	7.3	6.2	.9	.2
Hardwoods:				
Select white oaks	102.4	64.8	27.3	10.3
Other white oaks	133.5	96.1	19.5	17.9
Select red oaks	18.2	12.4	2.2	3.6
Red oaks	144.2	95.4	22.4	26.4
Other red oaks	61.5	47.8	2.4	11.3
Hickory A	17.1	15.1	.9	1.1
Hickory B	24.4	19.4	1.9	3.1
Hard maple	3.0	1.6	.5	.9
Soft maple	1.3	.8	.4	.1
Sweetgum	.1	--	--	.1
Tupelo and blackgum	2.9	1.6	.5	.8
Ash	10.3	7.2	1.1	2.0
Sycamore	1.9	.9	--	1.0
Basswood	.4	--	.2	.2
Black walnut	7.3	6.1	.8	.4
Black cherry	2.4	1.9	--	.5
Elm	9.7	7.2	1.0	1.5
Other hardwoods	7.4	3.6	.2	3.6
Noncommercial species	1.4	1.4	--	--
Total hardwoods	549.4	383.3	81.3	84.8
All species	556.7	389.5	82.2	85.0

1/ Volumes are for trees 9.0 inches d.b.h. and larger for softwoods and 11.0 inches d.b.h. and larger for hardwoods. Volumes for rough and rotten trees are for trees 5.0 inches d.b.h. and larger.

Table 30.--*Net volume of short-log trees on commercial forest land, by species and diameter class, Southwestern Ozarks, Missouri, 1972*

(Million board feet)[1/]

Species	All classes	Diameter class (inches at breast height)									
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods:											
Eastern redcedar	3.4	2.6	--	.8	--	--	--	--	--	--	--
Total softwoods	3.4	2.6	--	.8	--	--	--	--	--	--	--
Hardwoods:											
Select white oaks	94.4	--	24.9	27.3	20.0	10.0	4.0	--	5.8	2.4	--
Other white oaks	72.5	--	34.2	21.0	8.0	5.8	1.8	--	1.2	.5	--
Select red oaks	6.5	--	2.7	.5	.4	--	.7	1.3	.9	--	--
Red oaks	69.6	--	16.4	13.5	21.1	4.9	1.5	4.5	6.3	1.4	--
Other red oaks	7.4	--	3.4	1.7	1.1	.6	--	--	.6	--	--
Hickory A	3.7	--	1.0	2.0	--	.7	--	--	--	--	--
Hickory B	5.5	--	3.8	1.2	.5	--	--	--	--	--	--
Hard maple	1.6	--	.8	--	.8	--	--	--	--	--	--
Soft maple	1.2	--	.6	.6	--	--	--	--	--	--	--
Tupelo and blackgum	1.2	--	--	.6	--	--	--	--	.6	--	--
Ash	3.4	--	1.7	1.7	--	--	--	--	--	--	--
Basswood	.4	--	--	--	--	--	--	--	--	.4	--
Black walnut	2.9	--	.8	1.7	--	.4	--	--	--	--	--
Elm	3.3	--	1.7	.7	.9	--	--	--	--	--	--
Other hardwoods	1.1	--	.5	.6	--	--	--	--	--	--	--
Total hardwoods	274.7	--	92.5	73.1	52.8	22.4	8.0	5.8	15.4	4.7	--
All species	278.1	2.6	92.5	73.9	52.8	22.4	8.0	5.8	15.4	4.7	--

1/ International 1/4-inch rule.

Table 31.--*Net volume of sawtimber on commercial forest land, by species and log grade class, Southwestern Ozarks, Missouri, 1972*

(Million board feet)[1/]

Species	All grades	Log Grade 1	Log Grade 2	Log Grade 3	Tie and timber
Softwoods:					
Shortleaf pine	186.7	25.0	27.5	134.2	--
Eastern redcedar	10.5	--	--	10.5	--
Total softwoods	197.2	25.0	27.5	144.7	--
Hardwoods:					
Select white oaks	379.6	23.3	80.3	180.6	95.4
Other white oaks	297.7	11.2	35.9	182.8	67.8
Select red oaks	164.6	9.9	69.5	71.3	13.9
Red oaks	749.2	38.2	163.2	373.2	174.6
Other red oaks	48.6	--	8.6	19.5	20.5
Hickory A	53.4	--	11.5	25.5	16.4
Hickory B	71.0	3.3	6.9	36.9	23.9
Hard maple	8.4	--	2.3	5.6	.5
Soft maple	1.3	.3	.4	.5	.1
Tupelo and blackgum	13.7	--	9.4	--	4.3
Ash	25.9	--	12.4	13.5	--
Sycamore	26.0	11.2	5.5	6.5	2.8
Black walnut	26.2	2.5	7.4	16.3	--
Black cherry	2.7	--	.3	1.9	.5
Elm	10.1	--	10.1	--	--
Other hardwoods	9.6	--	1.0	7.7	.9
Total hardwoods	1,888.0	99.9	424.7	941.8	421.6
All species	2,085.2	124.9	452.2	1,086.5	421.6

1/ International 1/4-inch rule.

Table 32.--*Walnut volume on nonforest land, by diameter class and class of timber, Southwestern Ozarks, Missouri, 1972*

Diameter class (inches at breast height)	Growing stock trees	Sawtimber trees	Rough trees	Short-log trees	Rotten trees
	Thousand cubic feet	Thousand board feet[1/]	Thousand cubic feet	Thousand board feet[1/]	Thousand cubic feet
5.0-6.9	--	--	--	--	104.1
7.0-8.9	--	--	161.6	--	--
9.0-10.9	225.5	--	479.0	--	--
11.0-12.9	871.5	4,362.1	157.1	--	58.5
13.0-14.9	270.9	1,186.9	--	743.7	--
15.0-16.9	--	--	--	665.4	123.0
17.0-18.9	--	--	--	618.1	--
19.0-20.9	307.9	1,476.8	218.6	--	--
21.0-22.9	--	--	--	--	--
23.0-28.9	574.8	3,264.6	--	--	--
29.0-38.9	--	--	--	--	738.1
39.0+	--	--	--	--	--
All diameters	2,250.6	10,290.4	1,016.3	2,027.2	1,023.7

1/ International 1/4-inch rule.

Table 33.--*Net annual growth of growing stock and sawtimber on commercial forest land, by species and county, Southwestern Ozarks, Missouri, 1971*

Species	All counties		Barry		Christian		Douglas		Howell	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/
Softwoods:										
Shortleaf pine	28,558	7,219	2,823	641	1,633	413	3,924	1,003	4,013	982
Eastern redcedar	4,138	368	380	34	266	22	316	32	354	32
Total softwoods	32,696	7,587	3,203	675	1,899	435	4,240	1,035	4,367	1,014
Hardwoods:										
Select white oaks	49,355	8,479	3,886	679	2,759	465	5,228	894	5,873	1,060
Other white oaks	35,164	4,379	2,669	323	1,878	224	3,712	483	4,318	573
Select red oaks	22,126	5,382	1,784	421	1,196	286	2,351	561	2,727	679
Red oaks	132,771	22,334	10,354	1,794	7,190	1,200	14,114	2,343	16,203	2,830
Other red oaks	6,962	1,064	532	80	367	56	734	112	835	133
Hickory A	8,165	954	638	74	455	53	866	100	976	115
Hickory B	13,635	1,332	1,038	103	747	71	1,443	142	1,620	164
Hard maple	1,074	176	80	13	59	9	116	19	128	23
Soft maple	89	47	6	3	10	5	8	5	5	3
Tupelo and blackgum	1,039	201	89	16	50	11	114	22	127	25
Ash	3,176	677	253	55	190	39	329	69	354	84
Sycamore	5,088	1,446	380	106	342	102	519	145	494	140
Basswood	152	--	13	--	9	--	17	--	18	--
Black walnut	4,440	668	342	51	240	33	468	71	506	85
Black cherry	213	48	15	3	16	4	21	5	19	4
Elm	1,013	-55	63	-4	51	-6	89	-2	114	1
Other hardwoods	3,924	189	304	15	228	12	405	19	430	19
Total hardwoods	288,386	47,321	22,446	3,732	15,787	2,564	30,534	4,988	34,747	5,938
All species	321,082	54,908	25,649	4,407	17,686	2,999	34,774	6,023	39,114	6,952

(Table 33 cont. on next page)

(Table 33 cont.)

Species	McDonald		Newton		Ozark		Stone		Taney	
	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber
	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/
Softwoods:										
Shortleaf pine	1,418	368	873	223	2,531	636	1,165	295	1,266	332
Eastern redcedar	228	20	177	12	456	49	316	22	696	63
Total softwoods	1,646	388	1,050	235	2,987	685	1,481	317	1,962	395
Hardwoods:										
Select white oaks	3,835	658	2,329	415	5,089	889	2,671	440	3,418	573
Other white oaks	2,816	358	1,682	222	3,550	456	1,828	198	2,439	237
Select red oaks	1,722	431	1,032	263	2,278	564	1,178	279	1,556	359
Red oaks	10,759	1,785	6,190	1,074	13,367	2,281	6,873	1,160	8,253	1,407
Other red oaks	557	86	329	53	709	110	367	55	481	72
Hickory A	644	76	387	46	839	98	427	50	559	66
Hickory B	1,063	104	620	64	1,380	136	722	68	1,013	94
Hard maple	82	13	49	8	105	18	56	9	82	13
Soft maple	6	3	6	3	14	7	6	3	3	1
Tupelo and blackgum	89	16	51	10	101	21	51	11	63	13
Ash	240	53	152	34	355	74	177	37	228	43
Sycamore	392	113	241	75	595	175	291	82	316	79
Basswood	10	--	6	--	16	--	7	--	13	--
Black walnut	342	58	203	36	466	65	253	37	329	27
Black cherry	17	3	10	3	24	6	13	3	12	2
Elm	89	-2	51	-4	114	-3	63	-9	101	-15
Other hardwoods	329	15	177	9	393	22	215	10	266	13
Total hardwoods	22,992	3,770	13,515	2,311	29,395	4,919	15,198	2,433	19,132	2,984
All species	24,638	4,158	14,565	2,546	32,382	5,604	16,679	2,750	21,094	3,379

(Table 33 cont. below)

(Table 33 cont.)

Species	Texas		Webster		Wright	
	Growing stock	Saw-timber	Growing stock	Saw-timber	Growing stock	Saw-timber
	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/	Cords	Thousand bd.ft.1/
Softwoods:						
Shortleaf pine	6,418	1,686	1,025	261	1,469	379
Eastern redcedar	468	46	203	15	278	21
Total softwoods	6,886	1,732	1,228	276	1,747	400
Hardwoods:						
Select white oaks	8,051	1,343	2,722	481	3,494	582
Other white oaks	5,824	738	1,957	253	2,491	314
Select red oaks	3,583	859	1,209	307	1,510	373
Red oaks	22,620	3,667	7,342	1,264	9,506	1,529
Other red oaks	1,165	171	380	61	506	75
Hickory A	1,335	155	453	53	586	68
Hickory B	2,279	218	735	74	975	94
Hard maple	178	28	58	10	81	13
Soft maple	7	4	5	3	13	7
Tupelo and blackgum	177	32	51	11	76	13
Ash	468	101	177	39	253	49
Sycamore	759	202	278	84	481	143
Basswood	24	--	8	--	11	--
Black walnut	722	112	240	41	329	52
Black cherry	32	6	12	3	22	6
Elm	139	-5	63	-2	76	-4
Other hardwoods	658	29	215	11	304	15
Total hardwoods	48,021	7,660	15,905	2,693	20,714	3,329
All species	54,907	9,392	17,133	2,969	22,461	3,729

1/ International 1/4-inch rule.

Table 34.--*Timber removals from growing stock and sawtimber on commercial forest land, by item and species group, Southwestern Ozarks, Missouri, 1971*[1/]

Item	Growing stock					Sawtimber				
	All species	Shortleaf pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Shortleaf pine	Other softwoods	Soft hardwoods	Hard hardwoods
	Cords					Thousand board feet[2/]				
Roundwood products:										
Saw logs	119,689	11,027	4,522	8,481	95,659	46,346	5,269	1,693	4,224	35,160
Cooperage logs	6,835	--	--	--	6,835	3,249	--	--	--	3,249
Charcoal wood	12,000	--	--	51	11,949	1,399	--	--	6	1,393
Posts	10,064	4,837	316	139	4,772	1,401	240	15	37	1,109
Poles	2,083	2,058	--	--	25	288	288	--	--	--
Fuelwood	22,140	--	165	2,025	19,950	4,149	--	31	382	3,736
Miscellaneous[3/]	1,013	--	--	102	911	434	--	--	43	391
All products	173,824	17,922	5,003	10,798	140,101	57,266	5,797	1,739	4,692	45,038
Logging residues	33,721	1,187	15	924	31,595	3,900	139	1	131	3,629
Other removals	198,784	40,430	--	12,975	145,379	23,834	2,324	--	1,763	19,747
Total removals	406,329	59,539	5,018	24,697	317,075	85,000	8,260	1,740	6,586	68,414

1/ See glossary for timber removals from growing stock (page 5).
2/ International 1/4-inch rule.
3/ Includes shaving wood, heading bolts, etc.

Table 35.--*Timber removals from growing stock and sawtimber on commercial forest land, by species and county, Southwestern Ozarks, Missouri, 1971*[1]

Species	All counties		Barry		Christian		Douglas		Howell	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cords	Thousand bd. ft.[2]	Cords	Thousand bd. ft.[2]	Cords	Thousand bd. ft.[2]	Cords	Thousand bd. ft.[2]	Cords	Thousand bd. ft.[2]
Softwoods:										
Shortleaf pine	59,539	8,260	3,942	208	2,559	165	7,689	928	10,134	1,679
Eastern redcedar	4,883	1,734	135	42	180	66	226	84	--	--
Other softwoods	135	6	--	--	--	--	--	--	--	--
Total softwoods	64,557	10,000	4,077	250	2,739	231	7,915	1,012	10,134	1,679
Hardwoods:										
Select white oaks	52,602	12,489	3,436	766	1,941	455	4,288	1,016	11,283	2,973
Other white oaks	54,436	11,427	3,725	733	2,240	447	4,764	972	10,300	2,489
Select red oaks	8,524	1,966	804	197	430	98	816	185	1,938	496
Red oaks	169,727	35,425	15,303	3,456	8,687	1,778	16,689	3,419	34,517	8,281
Other red oaks	4,140	832	361	79	211	42	410	81	801	187
Hickory A	430	58	34	4	24	3	46	6	51	7
Hickory B	22,505	4,680	1,276	217	1,191	251	1,720	287	4,645	1,161
Hard maple	140	57	--	--	25	9	--	3	--	--
Soft maple	253	120	--	--	89	38	--	2	--	--
Tupelo and blackgum	659	305	291	134	38	18	76	29	63	31
Ash	1,533	489	551	208	180	58	75	15	102	29
Sycamore	9,189	3,486	1,153	474	495	178	505	158	1,191	477
Cottonwood	140	69	--	--	--	--	--	--	--	--
River birch	38	11	--	--	--	--	--	--	--	--
Basswood	115	63	51	27	--	3	--	--	--	--
Black walnut	3,000	980	209	65	745	263	155	47	121	34
Black cherry	51	16	--	--	--	3	--	3	--	--
Elm	13,301	2,330	1,555	388	702	104	1,194	195	1,330	222
Other hardwoods	989	197	89	19	25	8	89	19	114	21
Total hardwoods	341,772	75,000	28,838	6,767	17,023	3,756	30,827	6,437	66,456	16,408
All species	406,329	85,000	32,915	7,017	19,762	3,987	38,742	7,449	76,590	18,087

(Table 35 cont. on next page)

(Table 35 cont.)

Species	McDonald		Newton		Ozark		Stone		Taney	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/
Softwoods:										
Shortleaf pine	1,946	116	1,169	70	3,923	327	1,564	91	1,812	140
Eastern redcedar	--	--	--	--	1,067	383	75	21	3,200	1,138
Other softwoods	--	--	--	--	--	--	--	--	135	6
Total softwoods	1,946	116	1,169	70	4,990	710	1,639	112	5,147	1,284
Hardwoods:										
Select white oaks	2,862	677	2,099	447	4,775	1,147	1,540	293	2,186	384
Other white oaks	3,320	664	2,267	433	5,082	1,071	1,946	329	2,816	456
Select red oaks	464	104	287	56	729	167	236	39	383	68
Red oaks	10,317	2,007	6,233	1,113	15,065	3,089	5,588	872	8,094	1,335
Other red oaks	261	49	158	27	374	73	144	22	216	35
Hickory A	34	5	20	3	44	6	22	3	29	4
Hickory B	1,404	260	783	116	2,287	534	786	103	1,197	160
Hard maple	--	2	--	2	--	--	--	--	--	1
Soft maple	--	--	--	--	--	--	--	2	38	16
Tupelo and blackgum	--	--	--	--	51	28	--	1	25	11
Ash	69	22	11	2	90	24	14	2	223	64
Sycamore	696	265	448	171	1,102	418	156	32	707	278
Cottonwood	--	--	--	--	--	1	--	--	13	4
River birch	--	--	--	--	--	--	--	--	--	--
Basswood	--	--	--	--	--	--	--	--	38	23
Black walnut	283	93	309	105	133	37	61	19	327	106
Black cherry	--	--	--	--	--	2	--	--	--	--
Elm	1,038	214	605	109	1,181	171	726	82	1,457	208
Other hardwoods	76	13	89	18	51	9	38	10	76	16
Total hardwoods	20,824	4,375	13,309	2,602	30,964	6,777	11,257	1,809	17,825	3,169
All species	22,770	4,491	14,478	2,672	35,954	7,487	12,896	1,921	22,972	4,453

(Table 35 cont. on next page)

(Table 35 cont.)

Species	Texas		Webster		Wright	
	Growing stock	Sawtimber	Growing stock	Sawtimber	Growing stock	Sawtimber
	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/	Cords	Thousand bd. ft.2/
Softwoods:						
Shortleaf pine	21,398	4,335	1,381	82	2,022	119
Eastern redcedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total softwoods	21,398	4,335	1,381	82	2,022	119
Hardwoods:						
Select white oaks	12,749	3,090	2,331	540	3,112	701
Other white oaks	12,041	2,648	2,560	519	3,375	666
Select red oaks	1,802	429	296	61	339	66
Red oaks	34,467	7,474	6,725	1,234	8,042	1,367
Other red oaks	821	171	172	31	211	35
Hickory A	71	10	24	3	31	4
Hickory B	5,235	1,282	803	121	1,178	188
Hard maple	13	2	13	6	89	32
Soft maple	101	44	--	2	25	16
Tupelo and blackgum	89	41	13	7	13	5
Ash	111	34	51	16	56	15
Sycamore	1,917	764	352	124	467	147
Cottonwood	127	64	--	--	--	--
River birch	38	11	--	--	--	--
Basswood	--	--	13	5	13	5
Black walnut	139	36	388	135	130	40
Black cherry	38	4	--	--	13	4
Elm	2,021	383	616	90	876	164
Other hardwoods	152	29	89	16	101	19
Total hardwoods	71,932	16,516	14,446	2,910	18,071	3,474
All species	93,330	20,851	15,827	2,992	20,093	3,593

1/ See glossary for timber removals from growing stock (page 5).

2/ International 1/4-inch rule.

Table 36.--*Annual mortality of growing stock and sawtimber on commercial forest land, by cause and softwoods and hardwoods, Southwestern Ozarks, Missouri, 1971*

Cause	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1/]		
Disease	804	--	804	2,563	--	2,563
Fire	72	--	72	47	--	47
Weather	651	91	560	2,352	496	1,856
Unknown and other	292	--	292	607	--	607
Logging	38	--	38	94	--	94
All causes	1,857	91	1,766	5,663	496	5,167

1/ International 1/4-inch rule.

Table 37.--*Annual mortality of growing stock and sawtimber on commercial forest land, by species, Southwestern Ozarks, Missouri, 1971*

Species	Growing stock	Sawtimber
	Thousand cubic feet	Thousand board feet[1/]
Softwoods:		
Shortleaf pine	91	496
Total softwoods	91	496
Hardwoods:		
Select white oaks	249	1,085
Other white oaks	162	440
Red oaks	1,132	3,252
Black walnut	130	174
Elm	93	216
Total hardwoods	1,766	5,167
All species	1,857	5,663

1/ International 1/4-inch rule.

Table 38.--*Output of timber products by source of material and softwoods and hardwoods, Southwestern Ozarks, Missouri, 1969*

Product and species group	Standard unit[1]	Total		Roundwood products				Plant byproducts	
				Growing stock		Nongrowing stock			
		No. of units	M cu. ft.	No. of units	M cu. ft.	No. of units	M cu. ft.	No. of units	M cu. ft.
Saw logs:	M bd. ft.								
Softwood		5,649	1,037	5,638	1,035	11	2	--	--
Hardwood		67,787	12,053	46,180	8,227	21,607	3,826	--	--
Total		73,436	13,090	51,818	9,262	21,618	3,828	--	--
Cooperage logs:	M bd. ft.								
Hardwood		3,620	596	3,280	540	340	56	--	--
Total		3,620	596	3,280	540	340	56	--	--
Pulpwood:									
Hardwood	Std. cords	2,000	158	--	--	--	--	2,000	158
Total		2,000	158	--	--	--	--	2,000	158
Poles:	M pieces								
Softwood		46,100	137	46,100	137	--	--	--	--
Hardwood		700	2	700	2	--	--	--	--
Total		46,800	139	46,800	139	--	--	--	--
Posts:	M pieces								
Softwood		657	503	448	343	209	160	--	--
Hardwood		1,001	558	692	388	309	170	--	--
Total		1,658	1,061	1,140	731	518	330	--	--
Charcoal wood:	Std. cords								
Softwood		771	54	--	--	--	--	771	54
Hardwood		59,727	4,163	13,625	948	29,117	2,026	16,985	1,189
Total		60,498	4,217	13,625	948	29,117	2,026	17,756	1,243
Other:[2]	M cu. ft.								
Softwood		58	58	--	--	--	--	58	58
Hardwood		403	403	80	80	--	--	323	323
Total		461	461	80	80	--	--	381	381
Fuelwood:	Std. cords								
Softwood		765	47	185	11	318	19	262	17
Hardwood		92,920	6,037	26,720	1,736	57,277	3,721	8,923	580
Total		93,685	6,084	26,905	1,747	57,595	3,740	9,185	597
All products:	M cu. ft.								
Softwood		1,836	1,836	1,526	1,526	181	181	129	129
Hardwood		23,970	23,970	11,921	11,921	9,799	9,799	2,250	2,250
Total		25,806	25,806	13,447	13,447	9,980	9,980	2,379	2,379

1/ M (meaning thousand) board feet by International 1/4-inch rule. Cords are on a roughwood, 128-cubic foot basis.

2/ Other (industrial production) includes handle bolts, shaving bolts, heading stock, etc.

Table 39.--*Forest products harvested by ownership class and product, Southwestern Ozarks, Missouri, 1969*

Ownership class	Saw logs	Cooperage logs	Veneer logs	Pulpwood	Charcoal wood	Posts	Fuelwood	Poles	Mine timbers	Handle bolts	Miscellaneous
	M bd.ft.[1]	M bd.ft.[1]	M bd.ft.[1]	Cords[2]	Cords[2]	M pieces	Cords[2]	Pieces	M cu.ft.	M bd.ft.[1]	M cu.ft.
Federal:											
National Forest:											
Softwoods	536	--	--	--	--	75	--	50	--	--	--
Hardwoods	10,857	91	--	--	679	--	1,501	--	--	--	--
Corps of Engineers:											
Softwoods	--	--	--	--	--	4	--	--	--	--	--
Total	11,393	91	--	--	679	79	1,501	50	--	--	--
State:											
Softwoods	--	--	--	--	--	2	--	--	--	--	--
Hardwoods	--	--	--	--	46	--	--	--	--	--	--
Total	--	--	--	--	46	2	--	--	--	--	--
Private:											
Industrial:											
Softwoods	357	--	--	--	--	--	--	--	--	--	--
Hardwoods	2,289	12	--	--	11	--	--	--	--	--	--
Farm and other:											
Softwoods	4,756	--	--	--	--	576	503	46,050	--	--	--
Hardwoods	54,641	3,517	--	--	42,006	1,001	82,496	700	--	--	80
Total	62,043	3,529	--	--	42,017	1,577	82,999	46,750	--	--	80
All owners:											
Softwoods	5,649	--	--	--	--	657	503	46,100	--	--	--
Hardwoods	67,787	3,620	--	--	42,742	1,001	83,997	700	--	--	80
Total	73,436	3,620	--	--	42,742	1,658	84,500	46,800	--	--	80

1/ International 1/4-inch rule.
2/ Standard cords, rough wood basis.

Table 40.--*Volume of primary plant residue, by kind of material and type of use, Southwestern Ozarks, Missouri, 1969*

(Thousand cubic feet)

Source industry and kind of residue	Volume by type of use: Fiber[1]		Charcoal		Fuel[2]		Other[3]		Not used[4]	
	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods
Lumber:										
Coarse	158	54	1,147	17	427	26	--	208	1,605	
Fine	--	--	--	--	99	32	247	147	1,957	
Total	158	54	1,147	17	526	58	247	355	3,562	
All other:										
Coarse	--	--	42	--	54	--	--	--	40	
Fine	--	--	--	--	--	--	76	--	144	
Total	--	--	42	--	54	--	76	--	184	
All industries:										
Coarse	158	54	1,189	17	481	26	--	208	1,645	
Fine	--	--	--	--	99	32	323	147	2,101	
Total	158	54	1,189	17	580	58	323	355	3,746	

1/ For manufacture of pulp, hardboard, or roofing felt.
2/ All residue used for industrial or domestic fuel whether sold or given away.
3/ Includes uses such as livestock bedding, mulch, small dimension, and specialty items.
4/ Includes residue burned as waste.

Table 41.--*Timber products output from roundwood, by species and product, Southwestern Ozarks, Missouri, 1969*

Species	Saw logs		Veneer logs		Cooperage logs		Charcoal wood		Other products 3/	All products
	M bd. ft. 1/	M cu. ft.	M bd. ft. 1/	M cu. ft.	M bd. ft. 1/	M cu. ft.	Cords 2/	M cu. ft.	M cu. ft.	M cu. ft.
Softwoods:										
Shortleaf pine	4,231	735	0	0	0	0	0	0	610	1,345
Eastern redcedar	1,418	302	0	0	0	0	0	0	47	349
Other softwoods	0	0	0	0	0	0	0	0	13	13
Total softwoods	5,649	1,037	0	0	0	0	0	0	670	1,707
Hardwoods:										
White oaks	18,473	3,299	0	0	3,620	596	12,321	860	4,058	8,813
Red oaks	11,051	1,971	0	0	0	0	5,545	383	407	2,761
Black oak	28,630	5,112	0	0	0	0	18,616	1,295	815	7,222
Hickory	2,305	393	0	0	0	0	5,722	400	279	1,072
Hard maple	54	7	0	0	0	0	60	3	0	10
Soft maple	136	20	0	0	0	0	0	0	0	20
Blackgum	340	55	0	0	0	0	48	3	0	58
Ash	414	69	0	0	0	0	310	21	11	101
Cottonwood	66	10	0	0	0	0	0	0	0	10
Basswood	70	10	0	0	0	0	0	0	0	10
Black walnut	1,971	431	0	0	0	0	0	0	0	431
Black cherry	13	1	0	0	0	0	120	9	0	10
Elm	706	110	0	0	0	0	0	0	284	394
Birch	6	1	0	0	0	0	0	0	2	3
Sycamore	3,547	563	0	0	0	0	0	0	8	571
Other hardwoods	5	1	0	0	0	0	0	0	233	234
Total hardwoods	67,787	12,053	0	0	3,620	596	42,742	2,974	6,097	21,720
All species	73,436	13,090	0	0	3,620	596	42,742	2,974	6,767	23,427

1/ International 1/4-inch rule.
2/ Standard cords, rough wood basis.
3/ Includes posts, fuelwood, shaving bolts, heading bolts, etc.

Table 42.--*Average annual allowable cut for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and kind of material, Southwestern Ozarks, Missouri*

Species	Growing stock[1]			Sawtimber[1]	Rough and rotten trees		
	Total	Poletimber trees	Sawtimber trees	Total	Total	Short-log trees	Other
	Cords			Thousand board feet[2]	Cords		
Softwoods:							
Shortleaf pine	18,443	5,583	12,860	5,523	63	--	63
Eastern redcedar	987	569	418	187	1,608	266	1,342
Total softwoods	19,430	6,152	13,278	5,710	1,671	266	1,405
Hardwoods:							
Select white oaks	55,759	23,329	32,430	12,892	33,746	11,822	21,924
Other white oaks	52,962	20,532	32,430	11,955	34,000	5,646	28,354
Select red oaks	22,975	4,949	18,026	6,983	9,392	1,304	8,088
Red oaks	87,405	28,051	59,354	23,011	50,696	7,836	42,860
Other red oaks	7,000	2,430	4,570	1,981	17,671	494	17,177
Hickory A	5,684	3,266	2,418	896	4,734	--	4,734
Hickory B	16,253	10,430	5,823	2,117	6,899	861	6,038
Hard maple	2,215	190	2,025	652	494	405	89
Soft maple	152	--	152	54	380	102	278
Sweetgum	--	--	--	--	152	--	152
Tupelo and blackgum	2,861	1,899	962	342	1,000	278	722
Ash	4,126	949	3,177	1,249	2,987	379	2,608
Sycamore	1,747	101	1,646	641	127	--	127
Black walnut	4,266	1,709	2,557	926	3,127	405	2,722
Black cherry	430	--	430	208	1,076	--	1,076
Elm	2,595	1,747	848	371	2,139	177	1,962
Other hardwoods	747	--	747	254	1,418	--	1,418
Noncommercial species	--	--	--	--	342	--	342
Total hardwoods	267,177	99,582	167,595	64,532	170,380	29,709	140,671
All species	286,607	105,734	180,873	70,242	172,051	29,975	142,076

1/ Cuttings of less than 3 cords per acre, or the equivalent in board feet, are excluded.
2/ International 1/4-inch rule.

Table 43.--*Average annual allowable cut*[1/] *of growing stock for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and forest type, Southwestern Ozarks, Missouri*

(Thousand cubic feet)

Species	All forest types	Shortleaf pine	Eastern redcedar-hardwood	Shortleaf pine-oak	Post-blackjack oak	Black-scarlet oak	White oak	Elm-ash-cottonwood	Maple-beech
Softwoods:									
Shortleaf pine	1,457	350	26	513	136	292	140	--	--
Eastern redcedar	78	--	78	--	--	--	--	--	--
Total softwoods	1,535	350	104	513	136	292	140	--	--
Hardwoods:									
Select white oaks	4,405	6	125	73	436	2,159	1,566	40	--
Other white oaks	4,184	22	12	68	2,994	914	150	--	24
Select red oaks	1,815	--	36	101	174	1,389	94	21	--
Red oaks	6,905	32	11	221	922	5,272	447	--	--
Other red oaks	553	--	--	--	408	145	--	--	--
Hickory A	449	--	--	11	97	330	11	--	--
Hickory B	1,284	--	8	6	581	490	199	--	--
Hard maple	175	--	--	--	--	117	58	--	--
Soft maple	12	--	--	--	--	--	--	12	--
Tupelo and blackgum	226	--	--	--	--	125	101	--	--
Ash	326	--	20	--	51	122	85	48	--
Sycamore	138	--	--	--	--	138	--	--	--
Black walnut	337	--	43	--	15	199	43	15	22
Black cherry	34	--	--	--	--	--	34	--	--
Elm	205	--	9	--	69	77	50	--	--
Other hardwoods	59	--	36	--	--	23	--	--	--
Total hardwoods	21,107	60	300	480	5,747	11,500	2,838	136	46
All species	22,642	410	404	993	5,883	11,792	2,978	136	46

1/ Cuttings of less than 240 cubic feet per acre are excluded.

Table 44.--*Average annual allowable cut of growing stock for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand cubic feet)

Species	All classes	Stand-volume class[1/] (Cubic feet per acre)			
		240-399	400-799	800-1,199	1,200-1,599
Softwoods:					
Shortleaf pine	1,457	430	558	269	200
Eastern redcedar	78	28	29	21	--
Total softwoods	1,535	458	587	290	200
Hardwoods:					
Select white oaks	4,405	443	1,717	1,233	1,012
Other white oaks	4,184	413	2,091	1,255	425
Select red oaks	1,815	240	467	519	589
Red oaks	6,905	543	2,717	2,266	1,379
Other red oaks	553	80	285	95	93
Hickory A	449	135	227	87	--
Hickory B	1,284	206	592	379	107
Hard maple	175	--	96	--	79
Soft maple	12	--	12	--	--
Tupelo and blackgum	226	--	26	88	112
Ash	326	5	203	118	--
Sycamore	138	47	--	91	--
Black walnut	337	57	104	107	69
Black cherry	34	--	--	34	--
Elm	205	17	73	80	35
Other hardwoods	59	23	--	36	--
Total hardwoods	21,107	2,209	8,610	6,388	3,900
All species	22,642	2,667	9,197	6,678	4,100

1/ Cuttings of less than 240 cubic feet per acre are excluded.

Table 45.--*Average annual allowable cut for 1972-1981, by harvest cuttings of growing stock on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand cubic feet)

Species	All classes	Stand-volume class[1] (cubic feet per acre)			
		240-399	400-799	800-1,199	1,200-1,599
Softwoods:					
Shortleaf pine	1,280	314	497	269	200
Eastern redcedar	78	28	29	21	--
Total softwoods	1,358	342	526	290	200
Hardwoods:					
Select white oaks	4,028	386	1,574	1,077	991
Other white oaks	4,040	407	1,992	1,255	386
Select red oaks	1,695	175	437	519	564
Red oaks	5,478	367	1,815	2,192	1,104
Other red oaks	482	80	278	95	29
Hickory A	369	80	202	87	--
Hickory B	1,231	177	568	379	107
Hard maple	175	--	96	--	79
Soft maple	12	--	12	--	--
Tupelo and blackgum	213	--	13	88	112
Ash	321	--	203	118	--
Sycamore	130	39	--	91	--
Black walnut	291	37	85	100	69
Black cherry	34	--	--	34	--
Elm	202	14	73	80	35
Other hardwoods	59	23	--	36	--
Total hardwoods	18,760	1,785	7,348	6,151	3,476
All species	20,118	2,127	7,874	6,441	3,676

1/ Cuttings of less than 240 cubic feet per acre are excluded.

Table 46.--*Average annual allowable cut for 1972-1981, by thinnings of growing stock on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand cubic feet)

Species	All classes	Stand-volume class 1/ (cubic feet per acre)			
		240-399	400-799	800-1,199	1,200-1,599
Softwoods:					
Shortleaf pine	177	116	61	--	--
Total softwoods	177	116	61	--	--
Hardwoods					
Select white oaks	377	57	143	156	21
Other white oaks	144	6	99	--	39
Select red oaks	120	65	30	--	25
Red oaks	1,427	176	902	74	275
Other red oaks	71	--	7	--	64
Hickory A	80	55	25	--	--
Hickory B	53	29	24	--	--
Tupelo and blackgum	13	--	13	--	--
Ash	5	5	--	--	--
Sycamore	8	8	--	--	--
Black walnut	46	20	19	7	--
Elm	3	3	--	--	--
Total hardwoods	2,347	424	1,262	237	424
All species	2,524	540	1,323	237	424

1/ Cuttings of less than 240 cubic feet per acre are excluded.

Table 47.--*Average annual allowable cut of sawtimber[1] for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and forest type, Southwestern Ozarks, Missouri*

(Thousand board feet)[2]

Species	All forest types	Shortleaf pine	Eastern redcedar-hardwood	Shortleaf pine-oak	Post-blackjack oak	Black scarlet oak	White oak	Elm-ash-cottonwood	Maple-beech
Softwoods:									
Shortleaf pine	5,862	1,184	153	2,337	481	1,221	419	67	--
Eastern redcedar	187	--	187	--	--	--	--	--	--
Total softwoods	6,049	1,184	340	2,337	481	1,221	419	67	--
Hardwoods:									
Select white oaks	13,221	31	61	199	1,547	6,504	4,719	160	--
Other white oaks	12,050	29	67	232	8,395	2,459	748	--	120
Select red oaks	7,056	--	200	8	517	5,832	391	108	--
Red oaks	23,392	118	57	874	3,059	17,829	1,440	15	--
Other red oaks	1,991	--	--	--	1,625	364	2	--	--
Hickory A	961	--	--	--	384	489	51	37	--
Hickory B	2,124	--	--	--	790	900	434	--	--
Hard maple	653	--	--	--	--	409	244	--	--
Soft maple	54	--	--	--	--	--	--	54	--
Tupelo and blackgum	347	--	--	--	--	92	255	--	--
Ash	1,256	--	57	--	192	637	232	138	--
Sycamore	968	--	--	--	--	641	18	309	--
Black walnut	930	--	45	--	--	818	3	--	64
Black cherry	208	--	--	--	--	--	208	--	--
Elm	371	--	--	--	--	234	137	--	--
Other hardwoods	260	--	150	--	--	110	--	--	--
Total hardwoods	65,842	178	637	1,313	16,509	37,318	8,882	821	184
All species	71,891	1,362	977	3,650	16,990	38,539	9,301	888	184

1/ Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

2/ International 1/4-inch rule.

Table 48.--*Average annual allowable cut of sawtimber*[1] *for 1972-1981 from harvest cuttings and thinnings, on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand board feet)[2]

Species	All classes	Stand-volume class (board feet per acre)		
		0-1,499	1,500-2,499	2,500-4,999
Softwoods:				
Shortleaf pine	5,862	2,255	1,539	2,068
Eastern redcedar	187	124	63	--
Total softwoods	6,049	2,379	1,602	2,068
Hardwoods:				
Select white oaks	13,221	3,313	4,925	4,983
Other white oaks	12,050	4,631	5,610	1,809
Select red oaks	7,056	2,018	1,499	3,539
Red oaks	23,392	9,203	5,769	8,420
Other red oaks	1,991	1,121	870	--
Hickory A	961	679	44	238
Hickory B	2,124	879	817	428
Hard maple	653	84	244	325
Soft maple	54	54	--	--
Tupelo and blackgum	347	5	56	286
Ash	1,256	405	392	459
Sycamore	968	519	--	449
Black walnut	930	301	225	404
Black cherry	208	208	--	--
Elm	371	137	--	234
Other hardwoods	260	116	144	--
Total hardwoods	65,842	23,673	20,595	21,574
All species	71,891	26,052	22,197	23,642

1/ Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

2/ International 1/4-inch rule.

Table 49.--*Average annual allowable cut for 1972-1981, by harvest cuttings of sawtimber*[1] *on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand board feet)[2]

Species	All classes	Stand-volume class (board feet per acre)		
		0-1,499	1,500-2,499	2,500-4,999
Softwoods:				
Shortleaf pine	5,313	1,706	1,539	2,068
Eastern redcedar	187	124	63	--
Total softwoods	5,500	1,830	1,602	2,068
Hardwoods:				
Select white oaks	12,457	3,066	4,408	4,983
Other white oaks	11,723	4,304	5,610	1,809
Select red oaks	6,680	1,680	1,461	3,539
Red oaks	20,157	6,222	5,515	8,420
Other red oaks	1,989	1,119	870	--
Hickory A	777	539	--	238
Hickory B	2,124	879	817	428
Hard maple	653	84	244	325
Soft maple	54	54	--	--
Tupelo and blackgum	291	5	--	286
Ash	1,233	382	392	459
Sycamore	896	447	--	449
Black walnut	859	230	225	404
Black cherry	208	208	--	--
Elm	371	137	--	234
Other hardwoods	260	116	144	--
Total hardwoods	60,732	19,472	19,686	21,574
All species	66,232	21,302	21,288	23,642

1/ Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

2/ International 1/4-inch rule.

Table 50.--*Average annual allowable cut for 1972-1981, by thinnings of sawtimber*[1] *on commercial forest land, by species and stand-volume class, Southwestern Ozarks, Missouri*

(Thousand board feet)[2]

Species	All classes	Stand-volume class (board feet per acre)	
		0-1,499	1,500-2,499
Softwoods:			
Shortleaf pine	549	549	--
Total softwoods	549	549	--
Hardwoods:			
Select white oaks	764	247	517
Other white oaks	327	327	--
Select red oaks	376	338	38
Red oaks	3,235	2,981	254
Other red oaks	2	2	--
Hickory A	184	140	44
Tupelo and blackgum	56	--	56
Ash	23	23	--
Sycamore	72	72	--
Black walnut	71	71	--
Total hardwoods	5,110	4,201	909
All species	5,659	4,750	909

1/ Cuttings of less than 3 cords per acre, or the equivalent in board feet, are included.

2/ International 1/4-inch rule.

Table 51.--*Area of allowable cut*[1/] *for 1972-1981, by harvest cuttings on commercial forest land, by forest type and stand-age class, Southwestern Ozarks, Missouri*

(Thousand acres)

Forest type	All ages	Stand-age class (years)										
		10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-119	120-139
Shortleaf pine	3.5	--	--	--	--	--	3.5	--	--	--	--	--
Eastern redcedar	1.9	.6	--	1.3	--	--	--	--	--	--	--	--
Eastern redcedar-hardwood	14.7	--	--	--	1.0	6.8	2.3	--	2.3	--	2.3	--
Shortleaf pine-oak	11.0	--	--	--	--	1.5	5.9	3.6	--	--	--	--
Post-blackjack oak	144.8	--	--	--	--	--	22.9	51.0	15.8	11.8	23.7	19.6
Black-scarlet oak	150.1	--	--	--	--	--	18.2	60.0	15.8	28.1	20.0	8.0
White oak	51.6	--	--	--	--	--	1.1	14.4	6.9	14.7	14.5	--
Elm-ash-cottonwood	5.9	--	--	--	--	3.2	2.7	--	--	--	--	--
Maple-beech	1.5	--	--	--	--	--	--	--	1.5	--	--	--
All forest types	385.0	.6	--	1.3	1.0	11.5	56.6	129.0	42.3	54.6	60.5	27.6

1/ For a 10-year period.

Table 52.--*Area of allowable cut*[1/] *by thinnings on commercial forest land for 1972-1981, by forest type and stand-age class, Southwestern Ozarks, Missouri*

(Thousand acres)

Forest type	All ages	Stand-age class (years)						
		0-9	10-19	20-29	30-39	40-49	50-59	60-69
Shortleaf pine	2.4	--	2.4	--	--	--	--	--
Shortleaf pine-oak	2.6	--	--	--	--	2.6	--	--
Black-scarlet oak	168.0	--	14.5	39.0	47.2	35.8	31.5	--
White oak	31.7	3.4	--	6.3	3.5	3.7	7.5	7.3
Elm-ash-cottonwood	3.5	--	--	3.5	--	--	--	--
All forest types	208.2	3.4	16.9	48.8	50.7	42.1	39.0	7.3

1/ For a 10-year period.

PRINCIPAL TREE SPECIES IN MISSOURI'S SOUTHWESTERN OZARKS UNIT[3/]

OFTWOOD SPECIES

- nortleaf pine . . . . . *Pinus echinata*
- astern redcedar . . . . . *Juniperus virginiana*

ARD HARDWOOD SPECIES

shes:
- White ash . . . . . *Fraxinus americana*
- Green ash . . . . . *Fraxinus pennsylvanica*
- Blue ash . . . . . *Fraxinus quadrangulata*

lack walnut . . . . . *Juglans nigra*

ard maples:
- Sugar maple . . . . . *Acer saccharum*

ickory group A:
- Shellbark hickory . . . . . *Carya laciniosa*
- Shagbark hickory . . . . . *Carya ovata*
- Mockernut hickory . . . . . *Carya tomentosa*

ickory group B:
- Bitternut hickory . . . . . *Carya cordiformis*
- Pignut hickory . . . . *Carya glabra* var. *glabra*
- Black hickory . . . . . *Carya texana*

elect white oaks:
- White oak . . . . . *Quercus alba*
- Bur oak . . . . . *Quercus macrocarpa*
- Swamp chestnut oak . . . . . *Quercus michauxii*
- Chinkapin oak . . . . . *Quercus muehlenbergii*
- Swamp white oak . . . . . *Quercus bicolor*

ther white oaks:
- Post oak . . . . *Quercus stellata* var. *stellata*

elect red oaks:
- Northern red oak . . . . . *Quercus rubra*
- Shumard oak . *Quercus shumardii* var. *shumardii*

Red oaks:
- Scarlet oak . . . . . *Quercus coccinea*
- Black oak . . . . . *Quercus velutina*

Other red oaks:
- Blackjack oak . . . . . *Quercus marilandica*
- Water oak . . . . . *Quercus nigra*
- Willow oak . . . . . *Quercus phellos*

Other hard hardwoods:
- Black locust . . . . . *Robinia pseudoacacia*
- Common persimmon . . . . . *Diospyros virginiana*
- Flowering dogwood . . . . . *Cornus florida*
- Honeylocust . . . . . *Gleditsia triacanthos*
- Osage-orange . . . . . *Maclura pomifera*
- Red mulberry . . . . . *Morus rubra*

SOFT HARDWOOD SPECIES

- American basswood . . . . . *Tilia americana*
- American sycamore . . . . *Platanus occidentalis*
- Black cherry . . . . . *Prunus serotina*
- Butternut . . . . . *Juglans cinerea*

Elms:
- Winged elm . . . . . *Ulmus alata*
- American elm . . . . . *Ulmus americana*
- Slippery elm . . . . . *Ulmus rubra*
- Rock elm . . . . . *Ulmus thomasii*

Soft maples:
- Silver maple . . . . . *Acer saccharinum*

- Sweetgum . . . . . *Liquidambar styraciflua*

Tupelo and blackgum:
- Blackgum . . . . . *Nyssa sylvatica* var. *biflora*

Other soft hardwoods:
- Boxelder . . . . . *Acer negundo*
- Cucumbertree . . . . . *Magnolia acuminata*
- Hackberry . . . . . *Celtis occidentalis*
- Ohio buckeye . . . . . *Aesculus glabra*
- Sassafras . . . . . *Sassafras albidum*

3/ The common and scientific names are based on "Check List of Native and Naturalized Trees of the United States (Including Alaska)," by Elbert L. Little, Jr., U.S. Dep. Agric., Agric. Handb. 41, 472 p., 1953.

APPENDIX

ACCURACY OF SURVEY

Forest survey information is based on a sampling procedure designed to provide reliable statistics at the State and Survey Unit levels. Consequently, the reported figures are estimates only. However, a measure of the reliability of these figures is given by the sampling errors. These sampling errors may be interpreted as meaning that the chances are two out of three that if a 100-percent inventory had been taken, using the same methods, the results would have been within the limits indicated.

For example, the estimated area of commercial forest land in the Southwestern Ozarks Unit in 1972, 2,311.4 thousand acres, has a sampling error of ±1.8 percent (41.6 thousand acres). The commercial forest area from a 100-percent inventory, then, would be expected to fall between 2,269.8 and 2,353.0 thousand acres (2,311.4 ± 41.6), there being a one-in-three chance that this is not the case.

Following are sampling errors for total estimated volume, net growth, and removals for both growing stock and sawtimber, and for area of commercial forest land during the 1972 Southwestern Ozarks Survey:

Item	*Southwestern Ozarks Unit Totals*	*Sampling error (Percent)*
Growing Stock:		
Volume	10,772.9 M cords	3.8
Growth	321.1 M cords	5.6
Removals	406.3 M cords	9.3
Sawtimber:		
Volume	2,085.2 MM bd. ft.	4.7
Growth	54.9 MM bd. ft.	6.8
Removals	85.0 MM bd. ft.	7.4
Commercial forest land	2,311.4 M acres	1.8

As survey data are broken down into units smaller than State or Survey Unit totals, the sampling error increases. The smaller the breakdown, the larger the sampling error. For example, the sampling error for area of commercial forest land in a particular county is higher than that for total commercial forest area in the Survey Unit. An approximation of the increasing sampling error can be obtained from table 53, which shows the sampling errors associated with estimates smaller than totals in the Southwestern Ozarks Unit.

SURVEY PROCEDURE

The major steps in the survey of the Southwestern Ozarks Unit were as follows:

1. A total of 27,343 1-acre points distributed systematically across aerial photos of the entire area were observed. A photo interpreter classified these points as either forest land (15,107) or nonforest land (12,236) in order to make a preliminary estimate of forest area. Next, 5,900 of the forest points were stereoclassified as to forest type, stand-size class, and density. Then 816 points classed as forest and 682 points classed as nonforest were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken. Some of the points examined were locations of permanent sample plots (each of which contained one variable-radius plot with basal area factor 5) established during the 1959 survey. Of the 613 points determined to be on commercial forest land from ground examination, 245 were at previously unsampled locations and 10-point variable-radius plots (basal area factor 37.5) were established uniformly over the sample acres. The remaining 368 points were at formerly established permanent plot locations and were remeasured by superimposing 10-point variable-radius plots (basal area factor 37.5) over the existing plots in addition to remeasuring the basal area factor 5 plots. Tree measurements made on new and remeasured plots were the basis for estimates of timber volume, growth, mortality, number of trees, and other forest classifications.

2. Statistics on timber utilization in 1969 were obtained from mill surveys and from remeasurement of permanent sample plots. The Missouri Department of Conservation conducted a canvass of resident sawmills, veneer

Table 53.--*Sampling errors*[1/] *for estimates smaller than unit totals of volume, net growth, and removals, and of area of commercial forest land, Southwestern Ozarks, Missouri, 1972*

Sampling error (percent)	Commercial forest	Growing stock			Sawtimber		
		Inventory	Growth	Removals	Inventory	Growth	Removals
	Thousand acres	Thousand cords			Million board feet		
1	8,652.0						
2	2,163.0						
3	961.3						
4	540.7	11,348.0					
5	346.1	7,262.7	447.3	1,393.7	2,194.1	116.4	188.2
10	86.5	1,815.7	111.8	348.1	548.5	29.1	47.1
15	38.4	807.0	49.7	154.4	243.8	12.9	20.9
20	21.6	453.9	28.0	87.3	137.1	7.3	11.8
25	13.8	290.5	17.9	55.7	87.8	4.7	7.5
50	3.5	72.6	4.5	13.9	21.9	1.2	1.9
100	.9	18.2	1.1	3.8	5.5	.3	.5

1/ At the 68-percent probability level.

mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed resident pulpmills, and the underground mining industry in Missouri, as well as out-of-State sawmills, pulpmills, and veneer mills to determine their use of timber from Missouri. Fuelwood and fencepost output was based on U.S. Census of Agriculture and Housing figures, a canvass of public and industrial timber owners, and a canvass of resident wood-treating plants. Estimates of primary mill residue used for fuelwood were obtained from the canvass of Missouri primary wood-using plants. Timber cut for products by owner class was determined by a canvass of all public and industrial timber owners. The portion of timber cut unaccounted for by the latter owners was grouped under "farmer and other owners."

3. To develop wood utilization factors used in converting timber products output to timber removals for saw logs, veneer logs, cooperage logs, pulpwood, and charcoal wood, 486 felled trees throughout the State were measured. Factors for all other products were obtained during the 1959-1960 Missouri utilization study.

4. Field data were sent to St. Paul where they were edited, punched on cards, and stored on magnetic tape for later machine sorting, computing, and tabulation.

ALLOWABLE CUT

Allowable cut is the estimated volume of timber on commercial forest land that could be cut annually for the next 10 years, while improving tree stocking and bringing about a more even distribution of age classes. In Missouri, annual allowable cut is shown separately as that from harvest cutting and from thinnings, and was determined by computer using an area control system for determining the number of acres to be cut annually.

The harvest cut of sawtimber was calculated from stands of forest types normally managed for sawtimber whose site index and age indicated they were ready for harvest, or would be within the next 10 years. Table 54 shows the site index used in these calculations for each forest type to determine whether the objective of management would be to grow sawtimber or pulpwood. Included also is the rotation age for each.

Stands that did not qualify for harvest during that period were checked to see if they were overstocked by basal area standards, or would be within the next 10 years. Stands determined to be overstocked were "thinned" by the computer back to their recommended basal-area stocking level, and the volume of sawtimber trees "thinned" was added to the volume of allowable cut by thinnings of growing stock and sawtimber. The volume of poletimber trees "thinned" was added to the growing-stock allowable cut by thinnings. In scheduling thinnings, the computer program first "removes" rough and rotten trees, then short-log trees, and finally, growing-stock trees.

Table 54.--*Forest type, site index, and rotation age, by management objective, used in calculation of annual allowable cut, Missouri, 1972*

Forest type	Site index	Rotation age	Management objective
		Years	
Shortleaf pine	50 or higher	60	Sawtimber
	Less than 50	40	Pulpwood
Shortleaf pine-oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Eastern redcedar	35 or higher	55	Sawtimber
	Less than 35	70	Sawtimber
Eastern redcedar-hardwood	45 or higher	50	Sawtimber
	Less than 45	60	Sawtimber
Black-scarlet oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
White oak	60 or higher	80	Sawtimber
	Less than 60	50	Pulpwood
Post-blackjack oak	All sites	50	Pulpwood
Oak-gum-cypress	All sites	60	Sawtimber
Cottonwood	All sites	30	Sawtimber
Elm-ash-cottonwood	All sites	50	Sawtimber
Maple-beech	All sites	90	Sawtimber

The harvest cut of growing stock included that of sawtimber in addition to the volume from stands of forest types normally managed for pulpwood that were or would be rotation age within the next 10 years.

Allowable cut is based on the assumptions that all timber will be available and accessible when needed, and that a ready market will exist for every species, size, and grade of material harvested. Further, it assumes that the proper sequence of cutting is known and will be followed, and that logging practices employed will result in an improved forest. Because there is no way of guaranteeing that these assumptions will be carried out during the next 10 years, the allowable cut estimates should be compared with timber removals figures only in a general way.

LOG GRADE

In the Southwestern Ozarks Unit the butt log of every sawtimber tree (972 trees) on every permanent sample plot was log-graded. Additionally, all of the logs in a smaller sample of trees throughout the State (265 trees) were log-graded. The volume yield by log grade for each tree in the latter sample was used to distribute the volume of trees in the former sample into log-grade classes. The resulting volumes by log-grade classes were expanded to provide an estimate for the entire unit.

Logs are graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber and How to Use Them," published by the Forest Products Laboratory under the designation D1737A, 1961, and USDA Forest Service standards for hardwood tie and timber logs. The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded.

Shortleaf pine was graded according to "Interim Southern Pine Log Grades," USDA Forest Service, 1953. All other softwoods were graded according to "Specifications for Log Grades of Hardwoods and Softwoods," Northern Hemlock and Hardwood Association, 1947. The lowest 16-foot log in softwood trees or a shorter log down to 12 feet if a 16-foot butt log was not present, was graded.

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1974. Timber resource of Missouri's Southwestern Ozarks, 1972. North Cent. For. Exp. Stn., St. Paul, Minn. 60 p. (USDA For. Serv. Resour. Bull. NC-21)

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OXFORD: 524.1:905.2(778). KEY WORDS: timber volume, growth, utilization, forest areas.

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Plant a tree...trees give oxygen.